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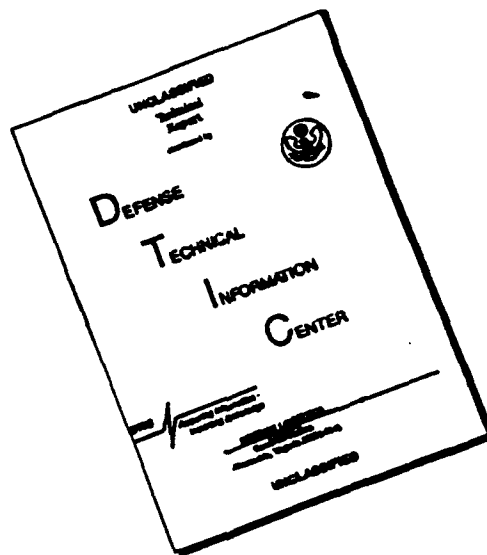
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**TECHNOLOGY INSERTION-ENGINEERING SERVICES
PROCESS CHARACTERIZATION
TASK ORDER NO. 1
(BLOCK 1)**

DATABASE DOCUMENTATION BOOK

WR-ALC

MANPSA

**CONTRACT SUMMARY REPORT
14 AUGUST 1989**

**CONTRACT NO. F33600-88-D-0567
CDRL SEQUENCE NO. B008**

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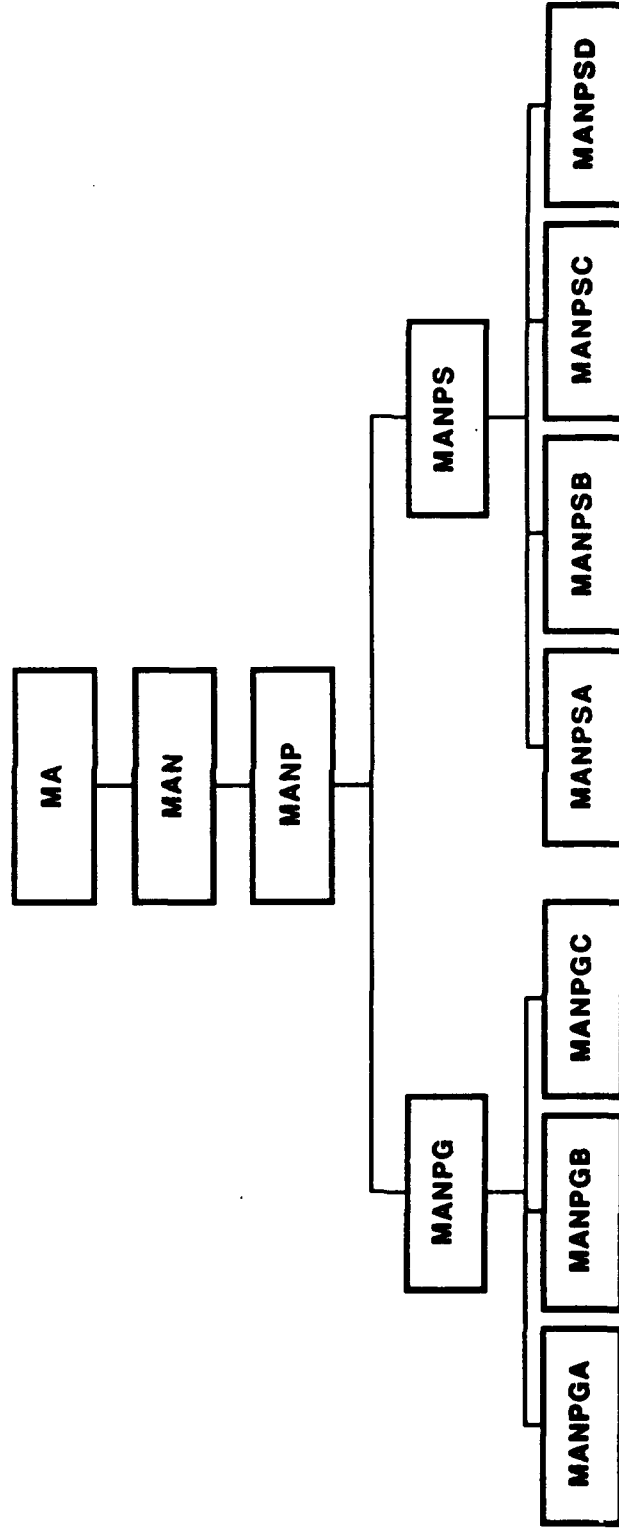
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LEGEND:

MA = DIR. OF MAINT.
 MAN = INDUSTRIAL PRODUCTS DIVISION
 MANPG = PRODUCTION BRANCH
 MANPS = GYRO SECTION
 MANPSA = GYRO REPAIR UNIT NO. 1
 MANPSB = GYRO REPAIR UNIT NO. 2
 MANPSD = GYRO REPAIR UNIT NO. 3

MANPS = SHEET METAL SECTION
 MANPSA = ADHESIVE BONDING UNIT
 MANPSB = SHEET METAL MANUFACTURING UNIT
 MANPSC = SHEET METAL REPAIR UNIT
 MANPSD = PLASTIC & MISC. SHEET METAL UNIT

LSC-20282

WR-ALC RCC PROCESS CHARACTERIZATION COVERAGE

FIGURE 9.0-1

WR-ALC (MANPSA)

1.0 Identification of RCC

Resource Control Center (RCC) MANPSA has been identified by the Statement of Work (SOW) of Contract F33600-88-D-0567, Technology Insertion Engineering Services, Cure Notice Response for Task Order No. 1, for Process Characterization.

Resource control system

2.0 General Information

↳ MANPSA is an RCC with MANPS section of the Industrial Products Division (MAN) at WR-ALC. MANPSA is located in Building 169.

The primary workload in MANPSA consists of PDM, C-141 Ailerons and MISTR work consisting of other adhesive bonding work, namely, C-141 Petal Doors, Access Doors, Ailerons, Leading Edge, Horizontal Stabilizer, and the F-15 Speed Brake.

MANPSA will be discussed in more detail in the following Section 2.1 through 2.8.

2.1 Facility Layout Drawing

The facility layout drawings of Building 169 represent the existing As-Is condition.

The drawings entitled Master Shop Layout File Building 169 were updated as of April 1989 and are of good quality.

2.2 Equipment

MANPSA is comprised mainly of conventional sheet metal and certain specialized composite material fabrication equipment. MANPSA has large assembly and check fixtures, rivet installation holding fixtures, fixed tables and dollies, overhead lifting cranes, transport dollies, drying ovens, autoclaves, necessary equipment for autoclave support, and other ordinary support equipment.

MANPSA also has the normal sheet metal equipment to support the PDM/MISTR workload such as hand brakes, hand formers, drill press, band saw, hole punch, bench grinder, as well as all the rivet driving and upsetting tools necessary to support the numerous type of fasteners used in repair/overhaul work.

The majority of the equipment within MANPSA varies in age between ten and twenty years old, with some forty years old or older. The majority of the equipment is in good working and usable condition.

New, replacement pieces of equipment are being planned for purchase within the next ten years.

A listing of all equipment for MANPSA can be found in the Equipment Profile List of Section 5.0.

2.3 Workforce

MANPSA has a less than adequate workforce. Other RCC areas such as the F-15 Wing Repair has priority over the MANPSA work and has drawn people from the MANPSA effort. The remaining workforce is well trained and well supervised. Personal interviews and the interviewees attendance at several "Quality Circle" and "QP 4" meetings has indicated a sense of professionalism and pride among the workforce.

The workforce is comprised mainly of Aircraft Sheet metal Mechanics of three basic classifications; namely, metal bond, autoclave, and the general sheet metal type, two foreman classifications, one leader-in-training, a secretary, a tool and parts attendant, and worker trainee.

The following constitutes a listing of the available manpower within MANPSA.

<u>Skill Code</u>	<u>Skill Level</u>	<u>Quantity</u>	<u>Experience</u>
11582	WS-14	2	20 Foreman 14
47881	WS-10	2	15 Foreman 10
47891	WS-10	37	Metal Bond
50374	WS-10	2	Autoclave
9A014	WS-10	2	Mechanic A/C
49533	WS-08	1	Sheet metal worker
49534	WS-08	4	Sheet metal worker
50888	WS-05	4	Mechanic helper
3070A	GS-04	3	Secretary

2.4 Repair Process Technologies

The repair process technologies within MANPSA consists of major unit manufacturing and small sheet metal conventional, honeycomb bonded and composite repairs on HIGH-VALUE C-141 and F-15 major aircraft assemblies. These assemblies are critical to flight safety and the performance of the aircraft in their assigned mission.

All of the aircraft assemblies to be inspected and repaired are received in Building 169 and are disassembled as required per the applicable Technical Order for inspection/repair/modification. They are reworked to incorporate all the aircraft modifications and Technical Order changes to meet the required configuration for the aircraft.

The sheet metal and composite components are repaired to a serviceable condition, otherwise are replaced with new parts. The repairs may consist of removing local corrosion, replacing damaged sections and those sections with major corrosion, replacing angles, brackets, rivets, fabricating special repair plates, etc. to repair damaged members of the minor or major structural component of the unit.

2.5 Workload Volume and Mix

The workload within MANPSA consists mostly Management of Item Subject to Repair (MISTR) items with a small amount of Programmed Depot Maintenance (PDM) work.

The C-141 Aileron is a PDM workload at the present time, but will revert to a MISTR item in the future. The C-141 Petal Door, Leading Edge, Horizontal Stabilizer, Access Door and the F-15 Speed Brake are MISTR workload.

2.6 Material Handling

Material handling in MANPSA involves the use of overhead cranes, slings, manpower, holding and transport dollies and work carts.

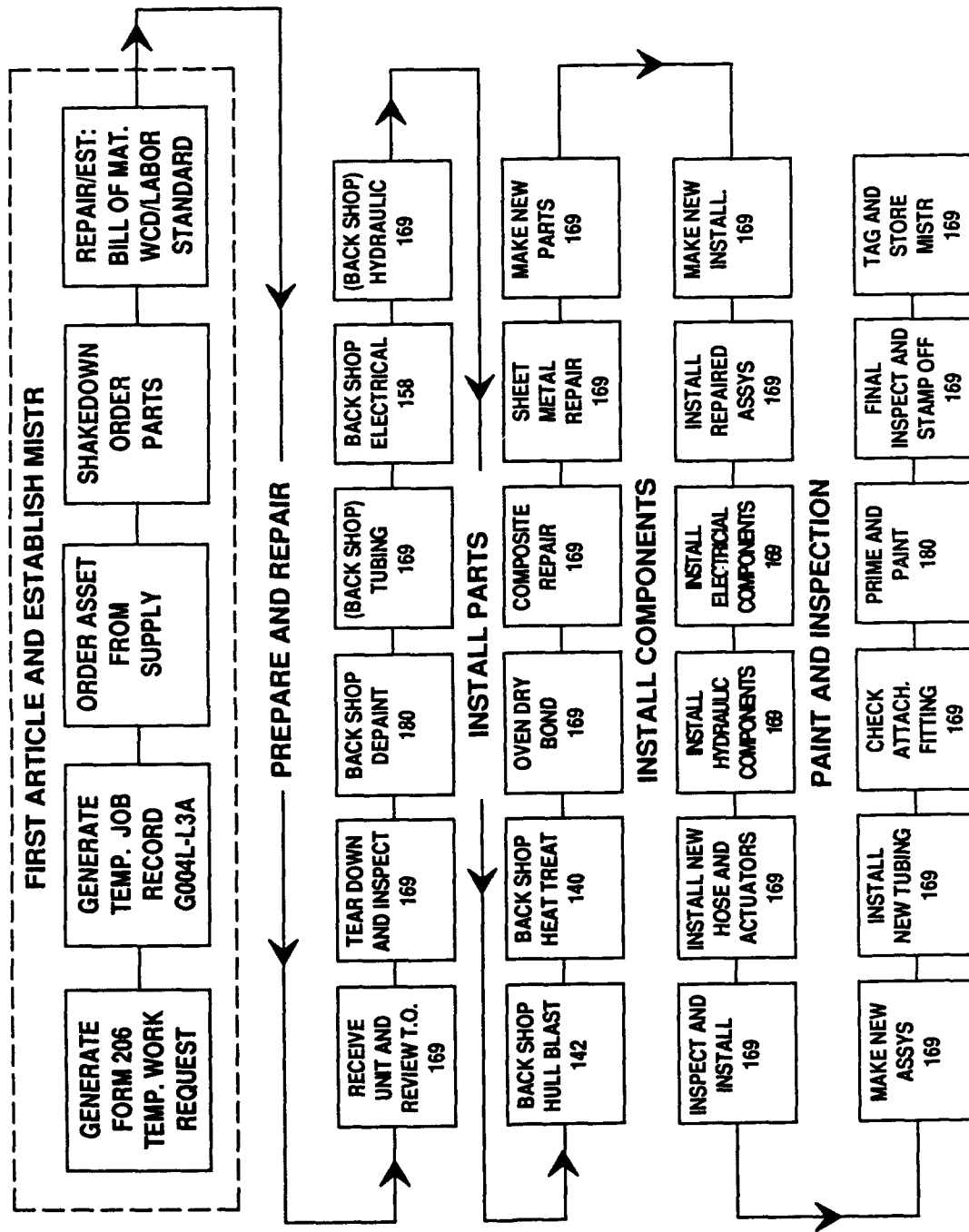
All the large and heavy items such as the C-141 Petal Doors and the Ailerons, etc. are loaded into and out of the check and assembly jigs and fixtures by the use of cranes and slings. Some of the assemblies over by "manpower" requiring several workers to accomplish the task. Some of the assemblies are moved and/or flip-

flopped or taken in and out of the jig or fixture as much as six or seven times before completion.

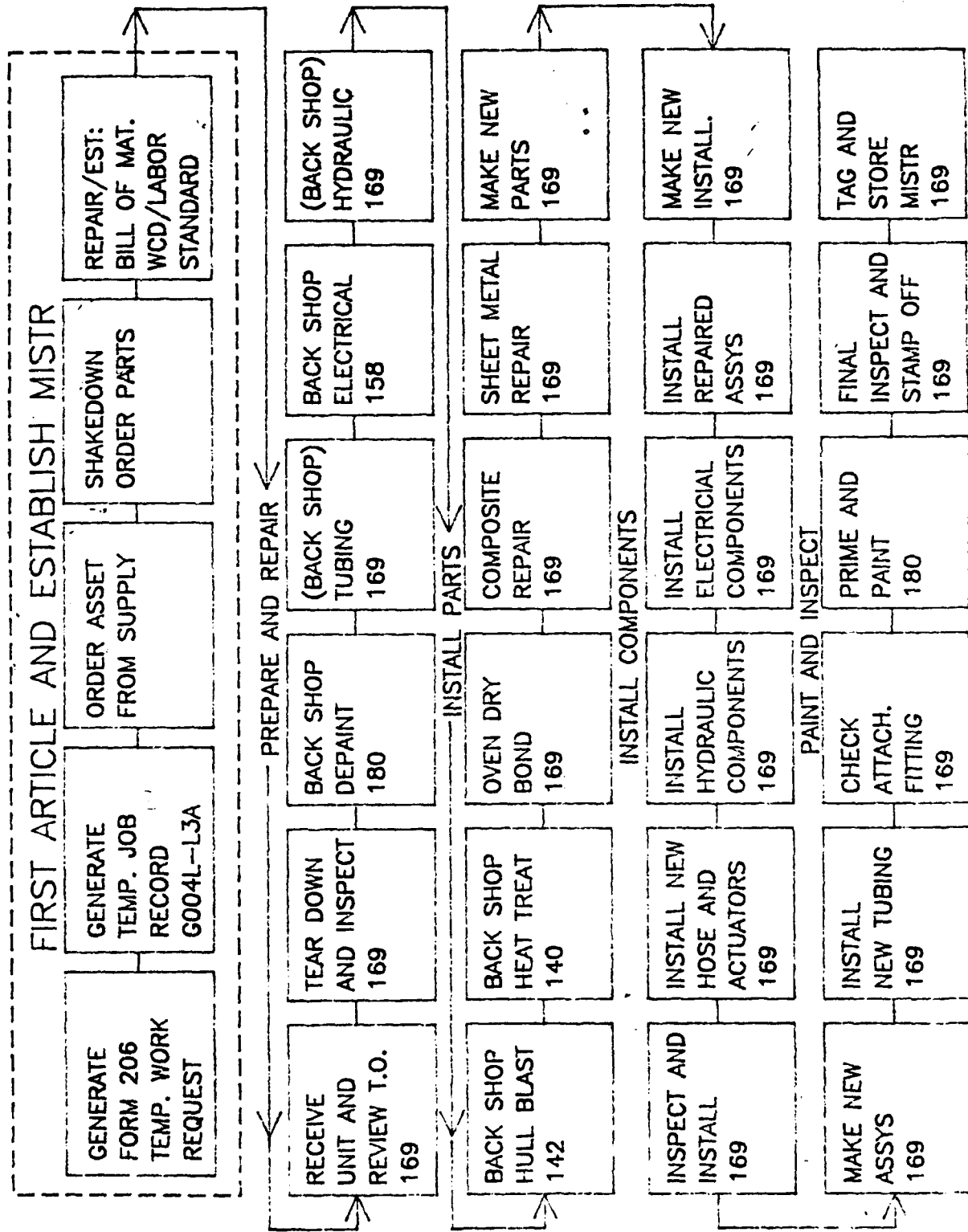
All work is moved, as required, by the mechanic workforce. Some moves are made by the overhead crane and sling, but the majority of material handling is by manhandling or by work dollies with wheels.

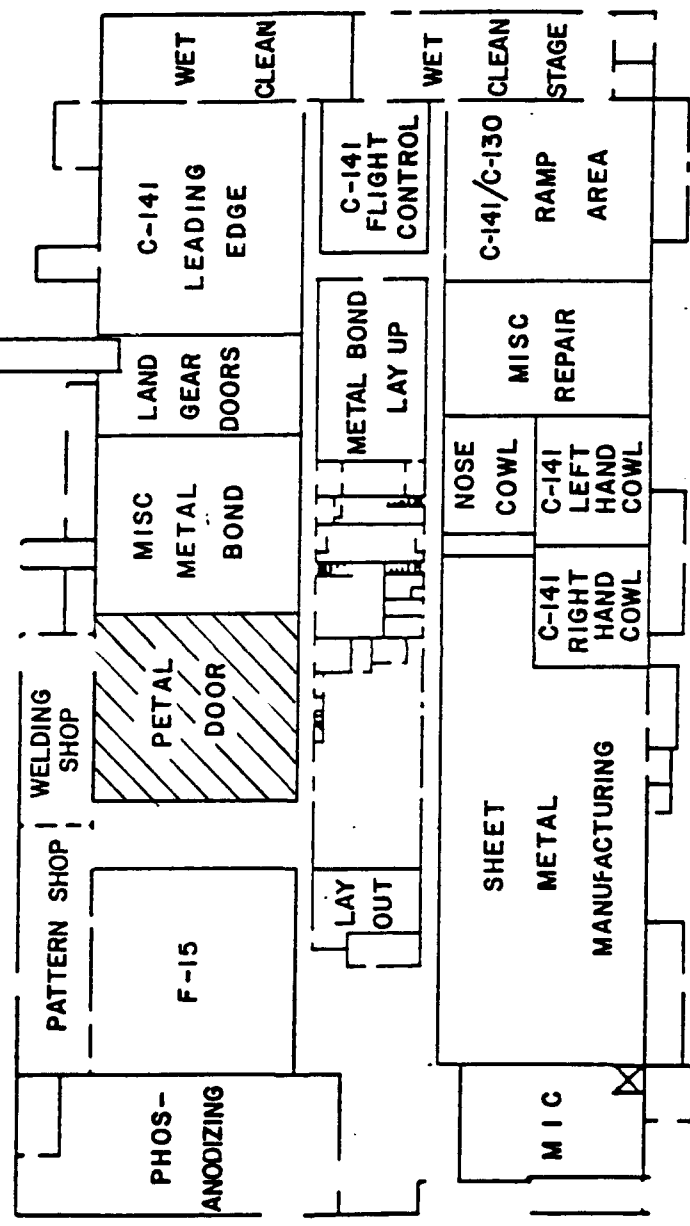
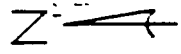
2.7 Storage

The only dedicated storage in the MANPSA area is several parts handling and storage bins in the Aileron and Petal Door areas. Large assemblies such as the Petal Door Skins are stored within the work area, making it difficult to work. The large items not being used should be returned to outside storage and not in Building 169. The skins and other large, bulky items are normally stored in wooden crates outside the MANPSA area.



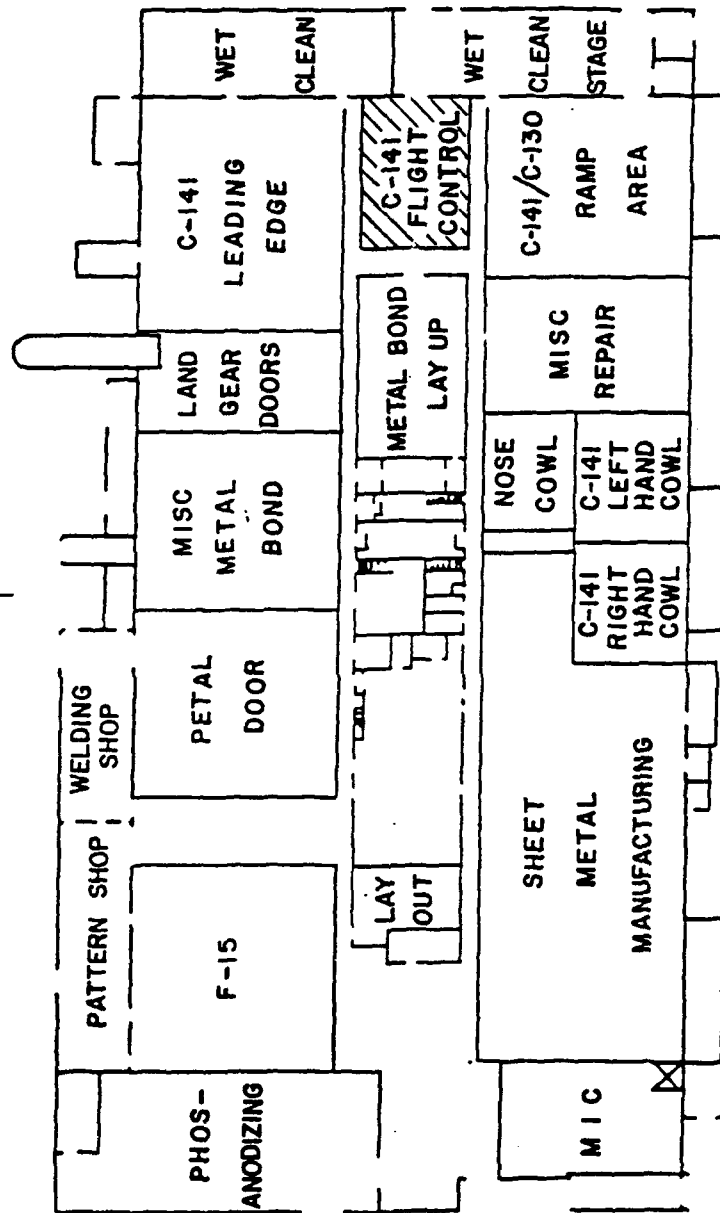
WR-ALC MANPSA PROCESS FLOW CHART
FIGURE





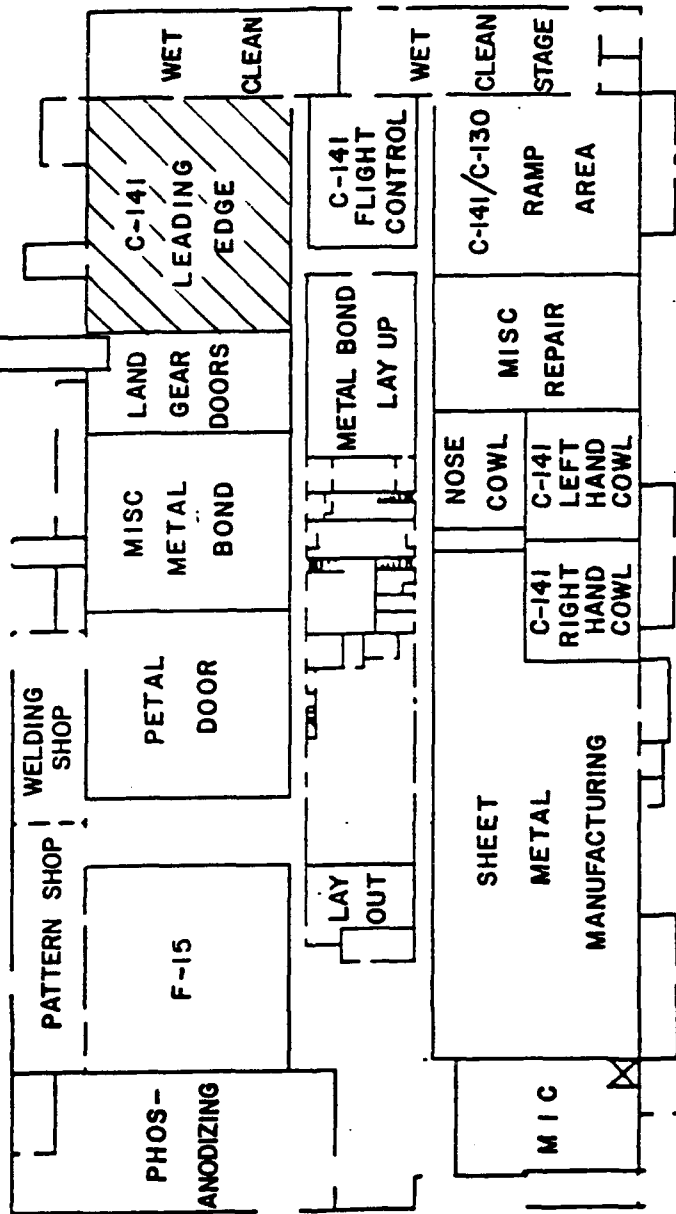
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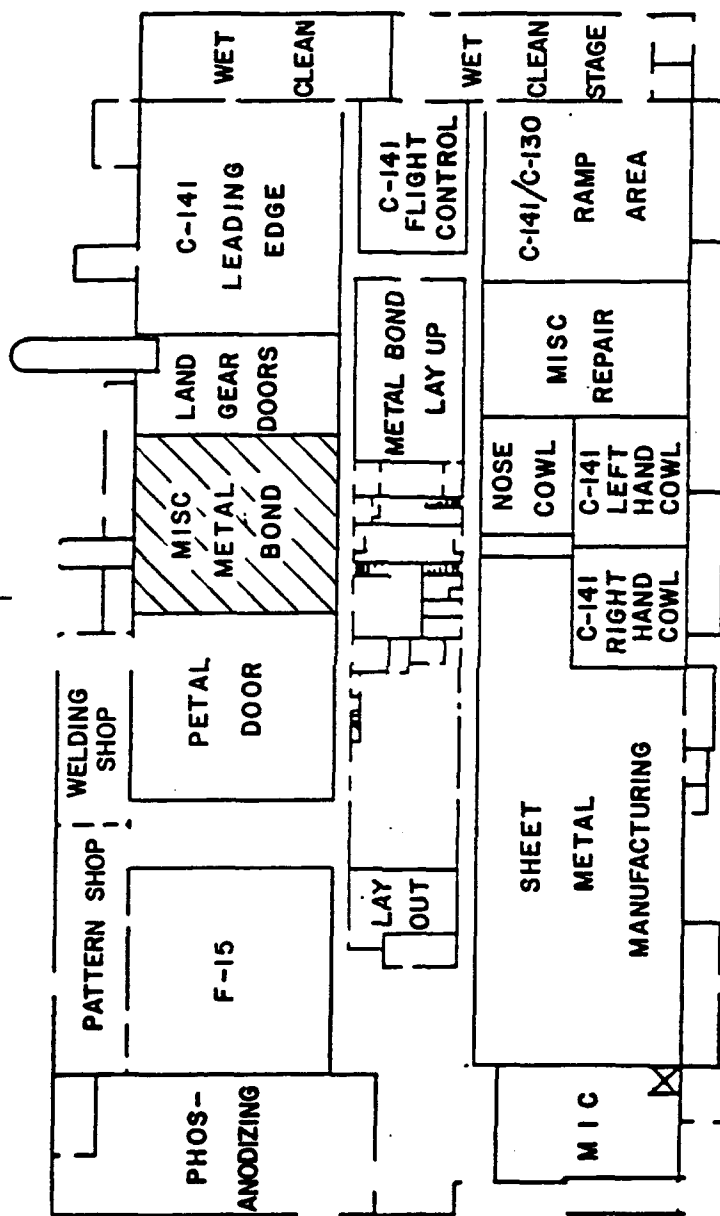
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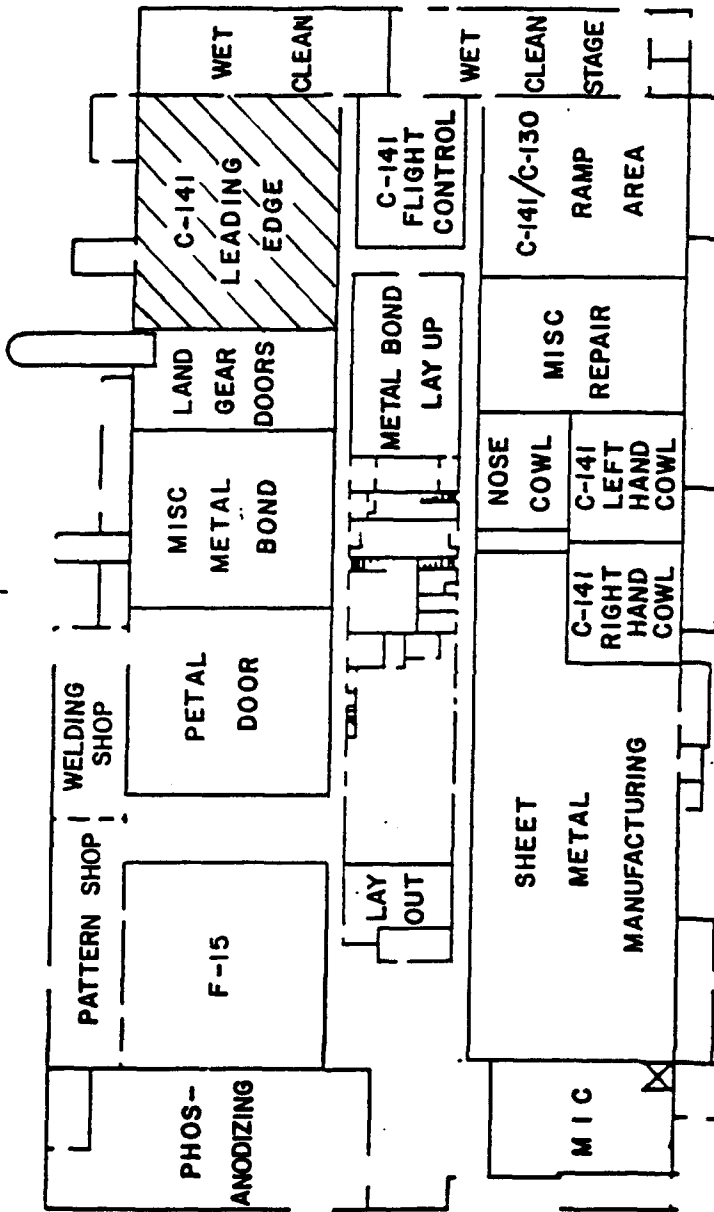
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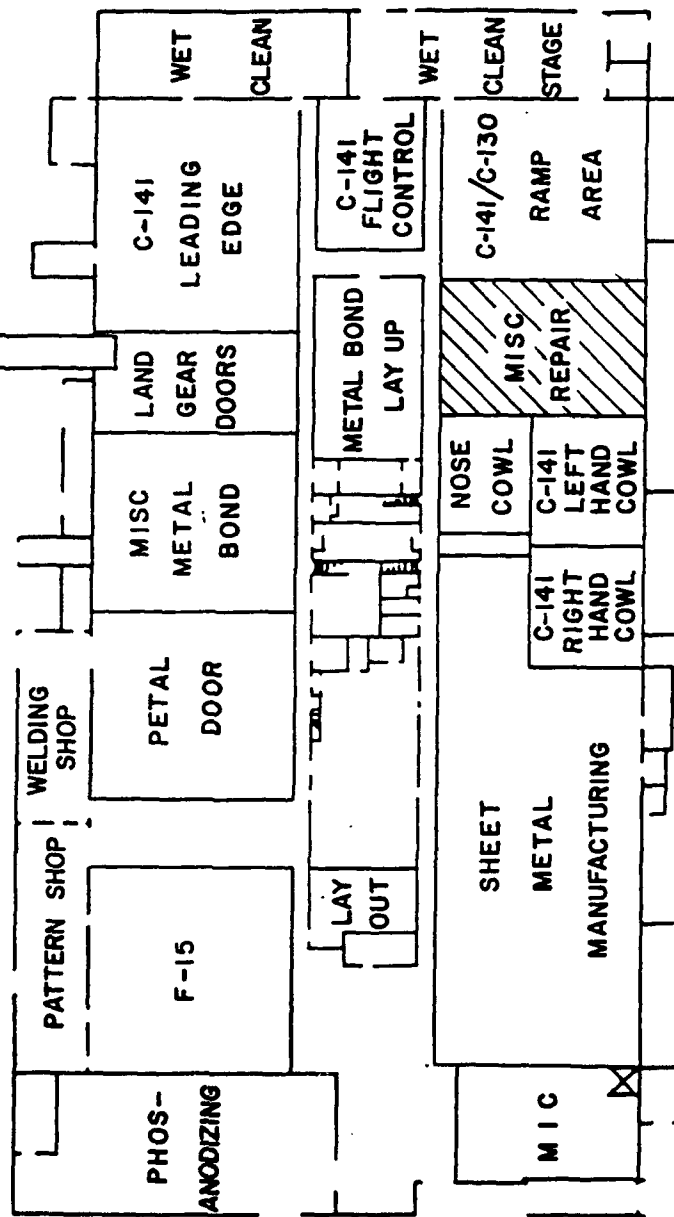
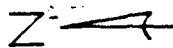


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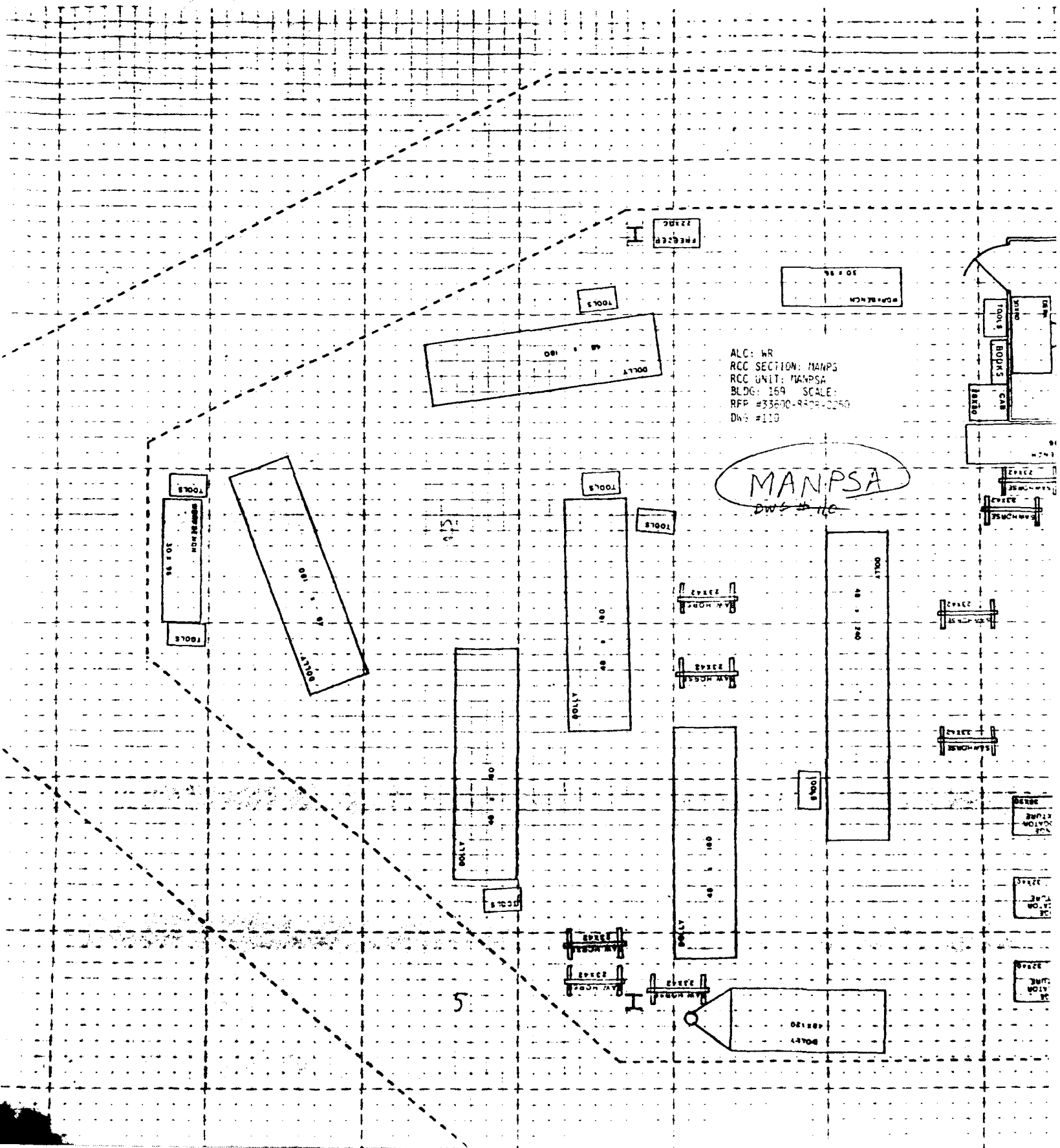
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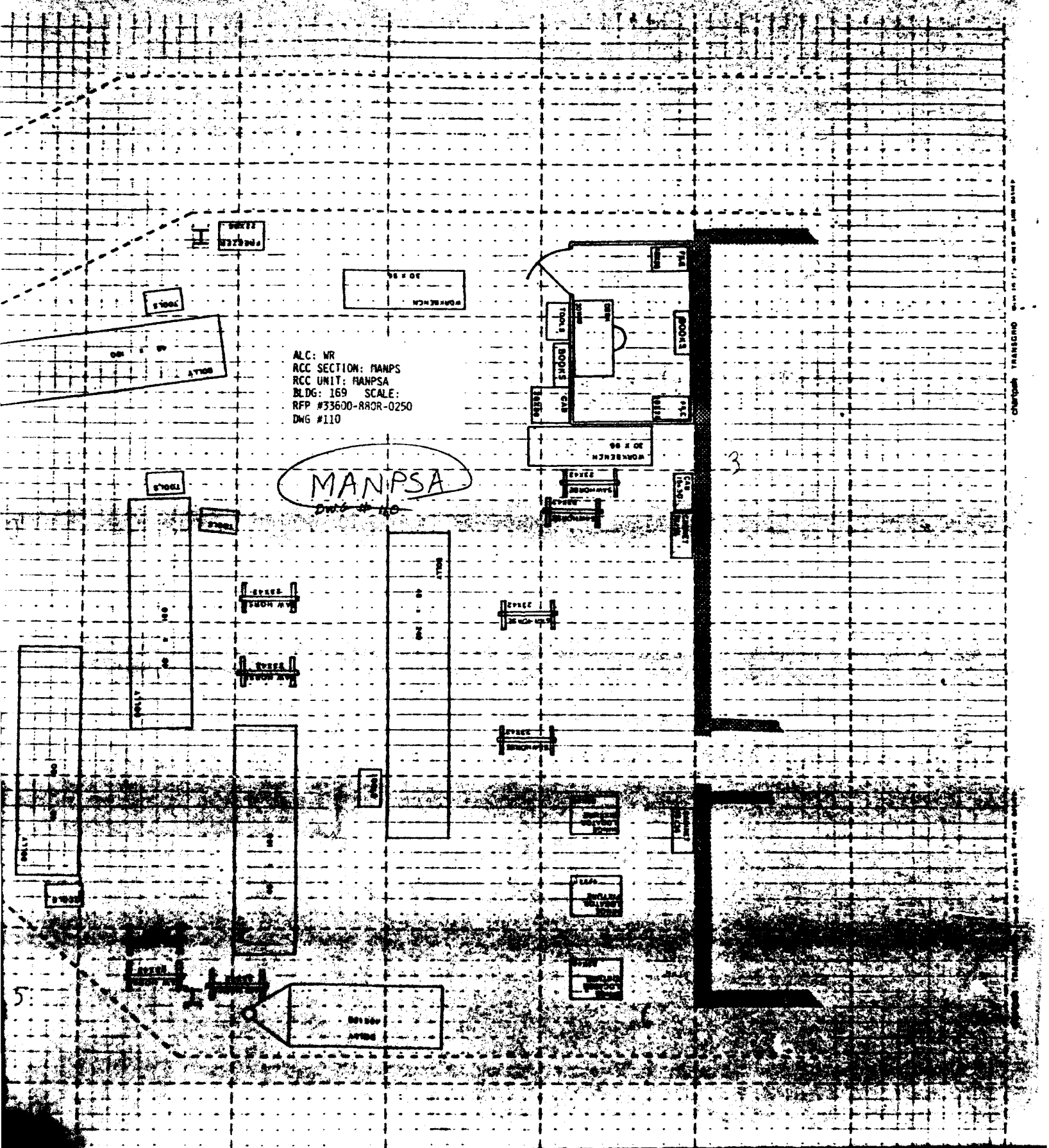
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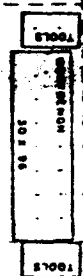
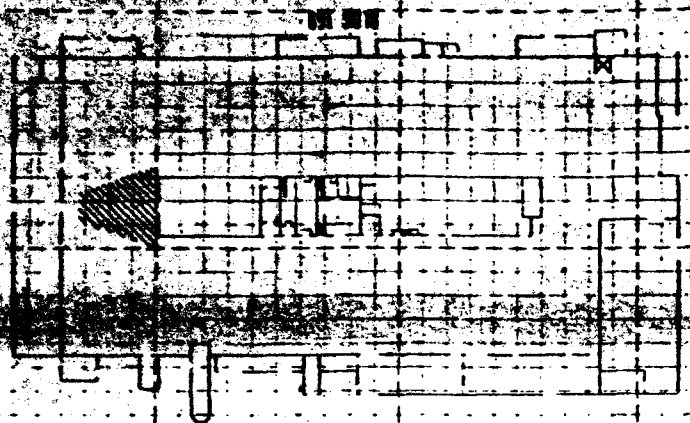


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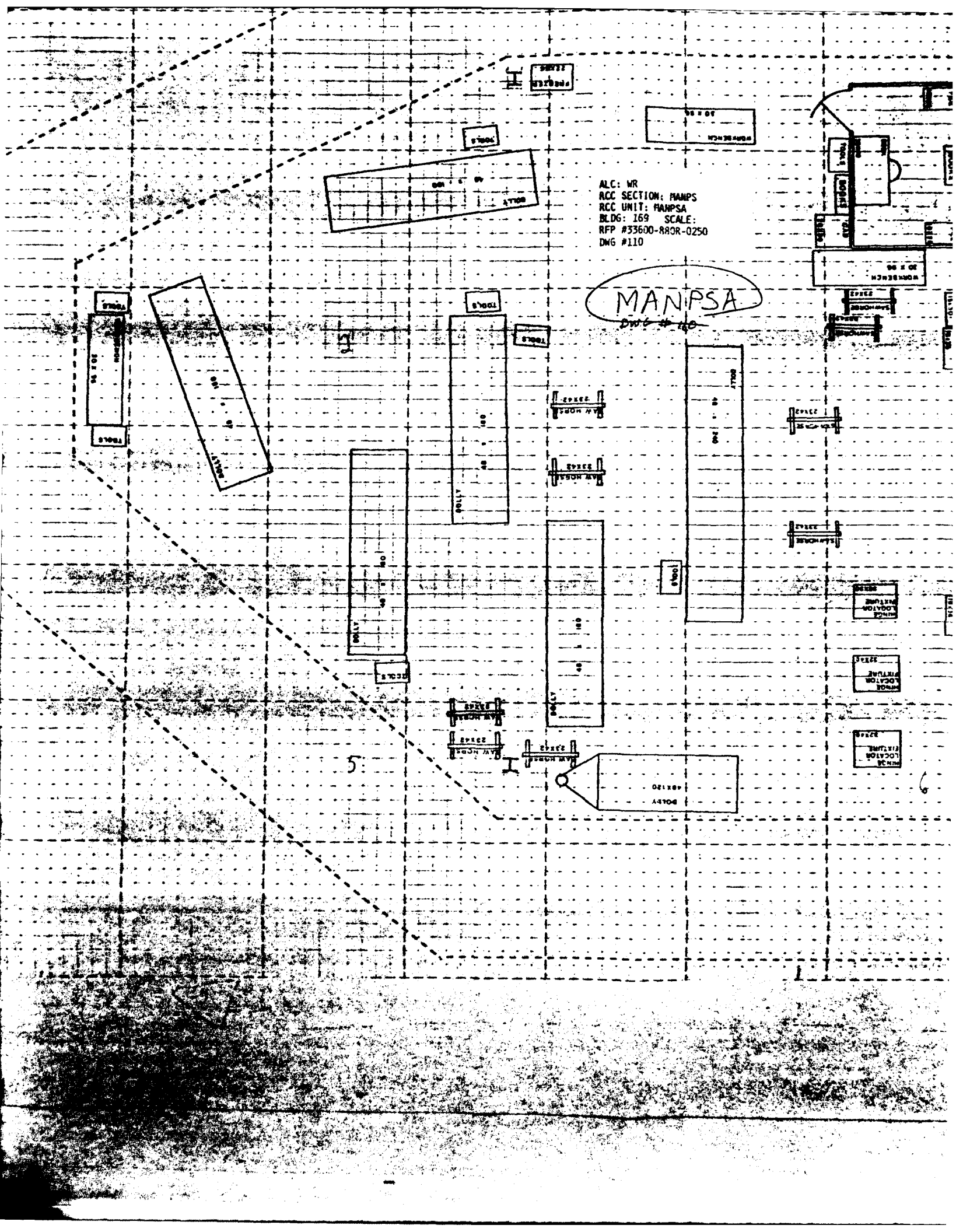
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MANPSA
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MANIPSA

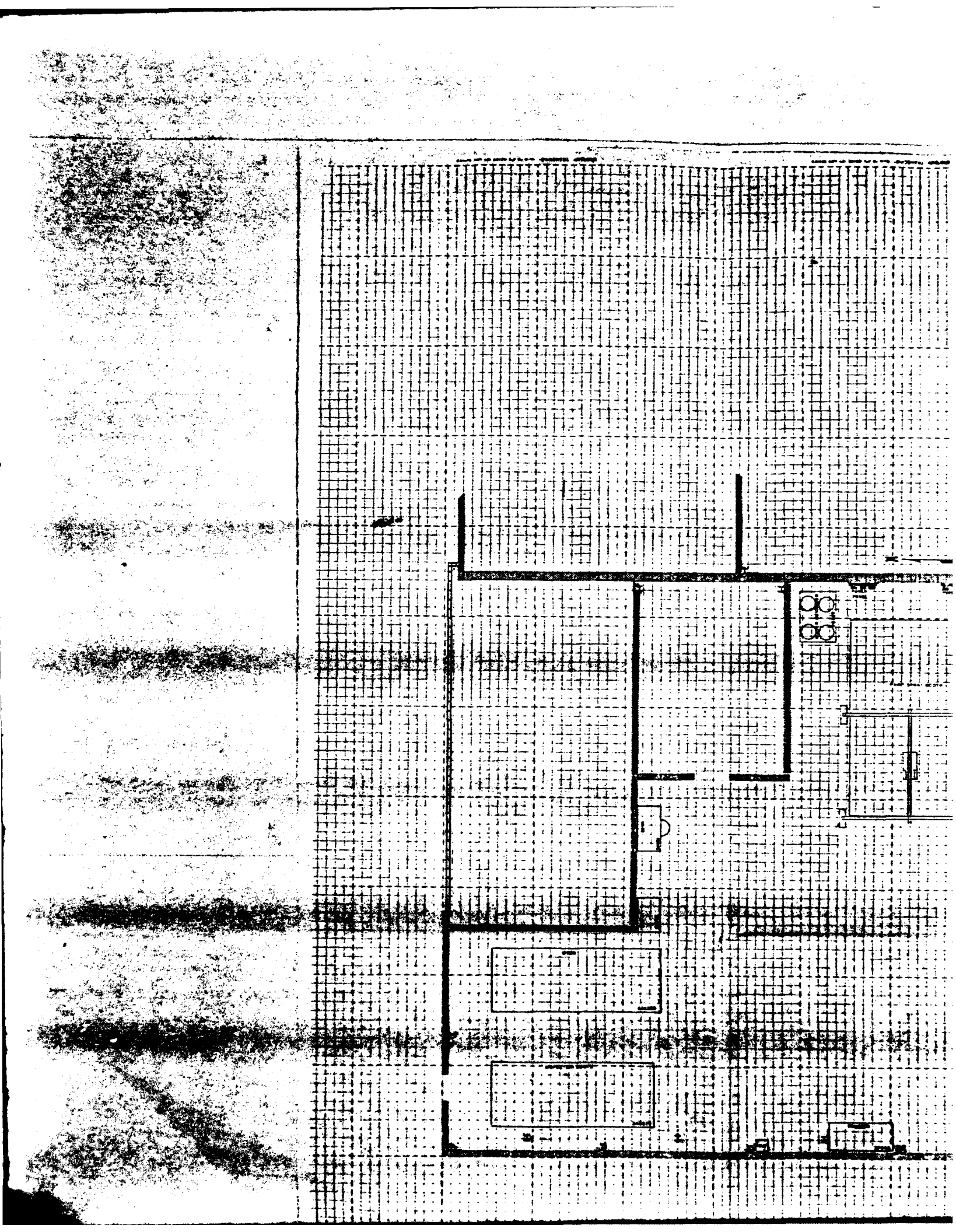
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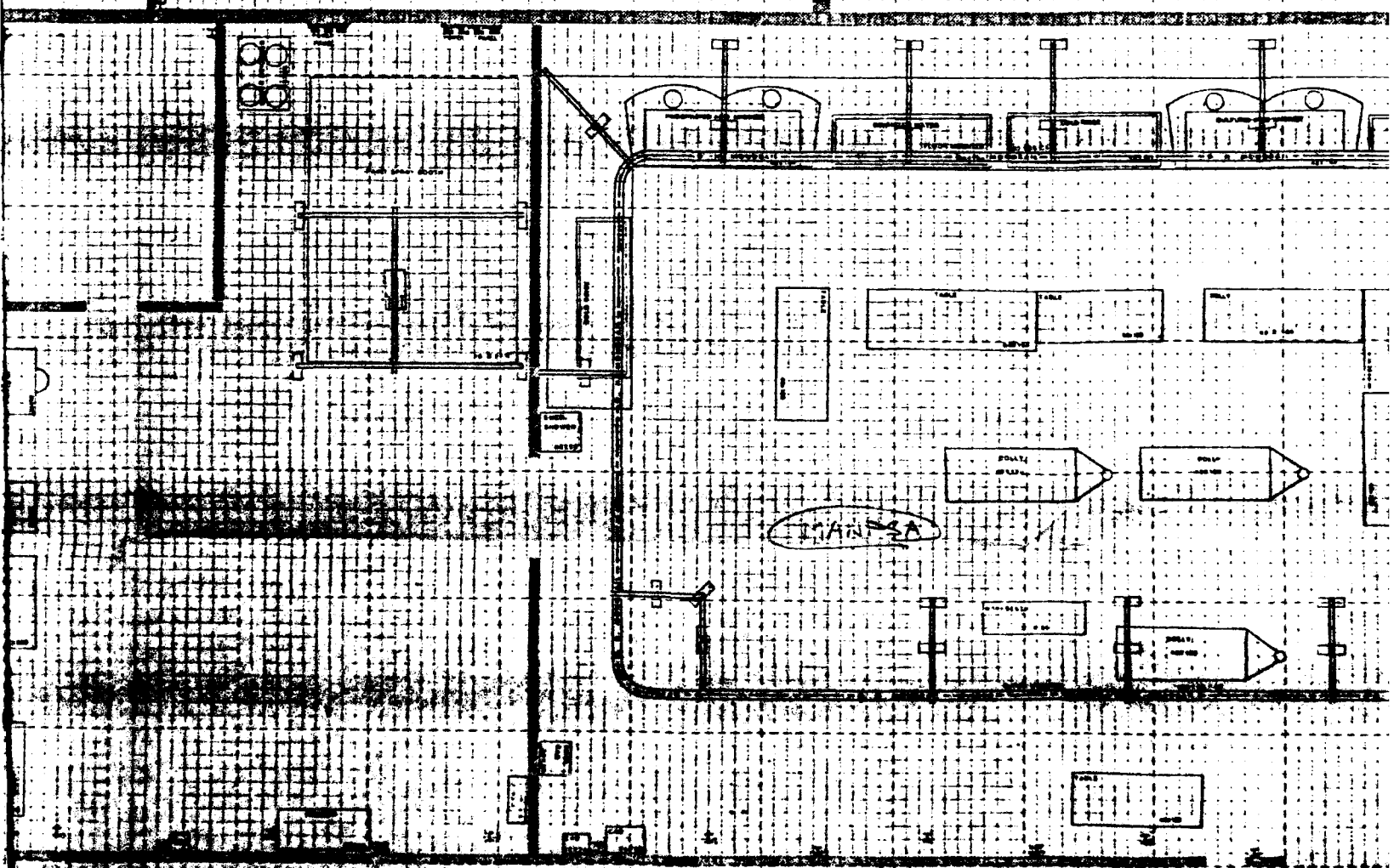
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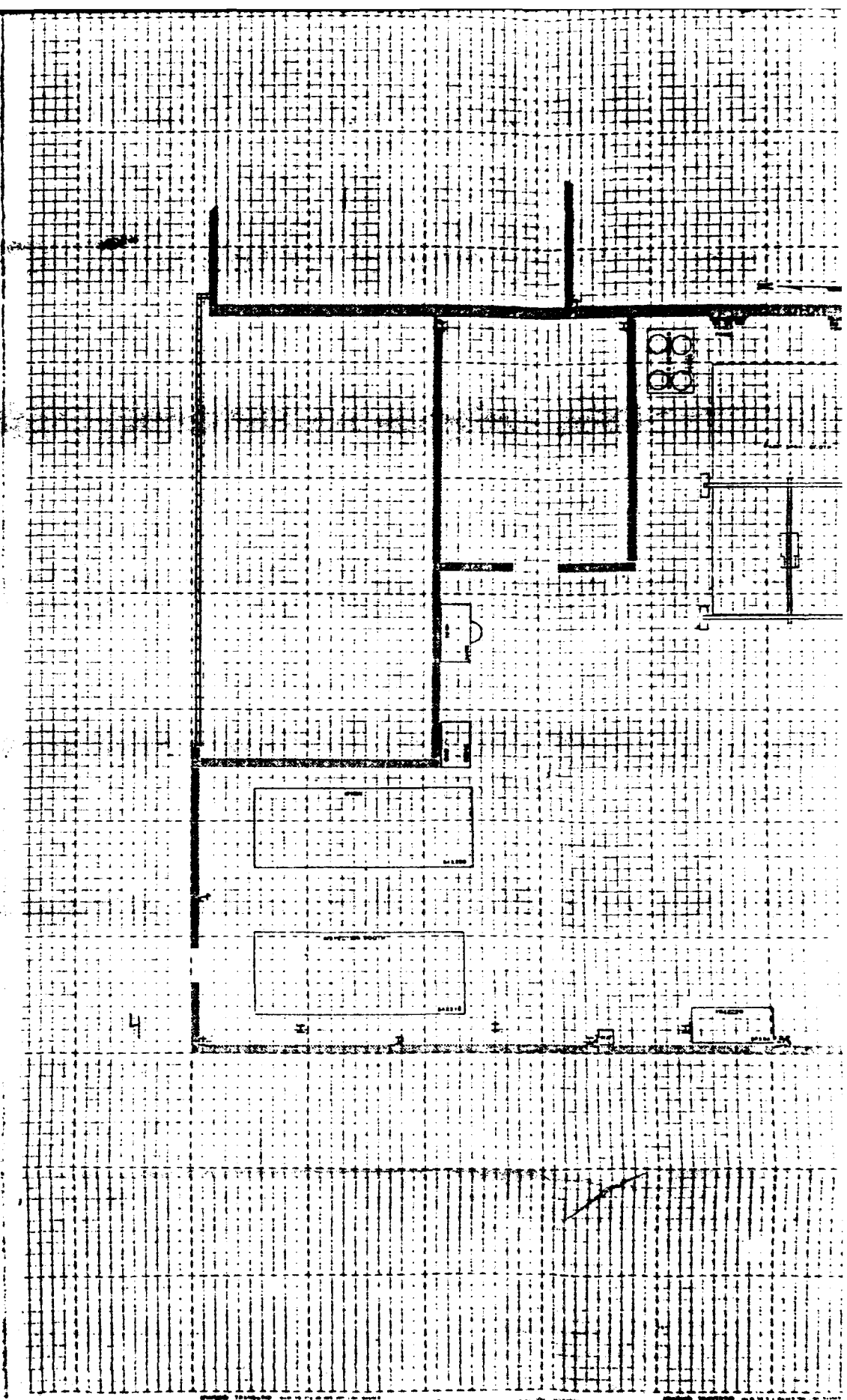
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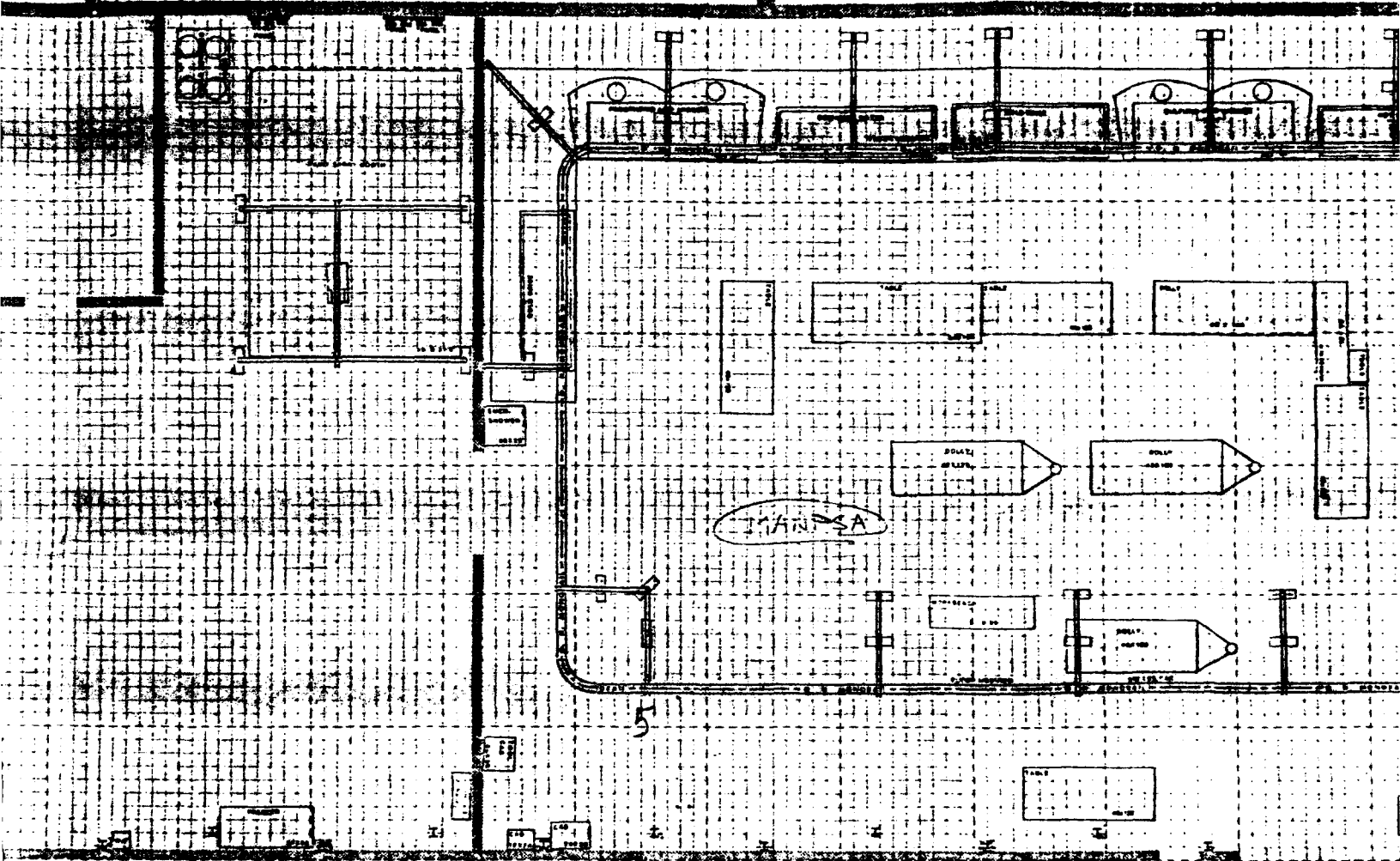
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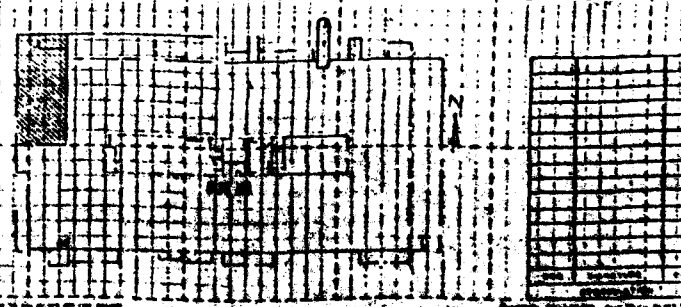


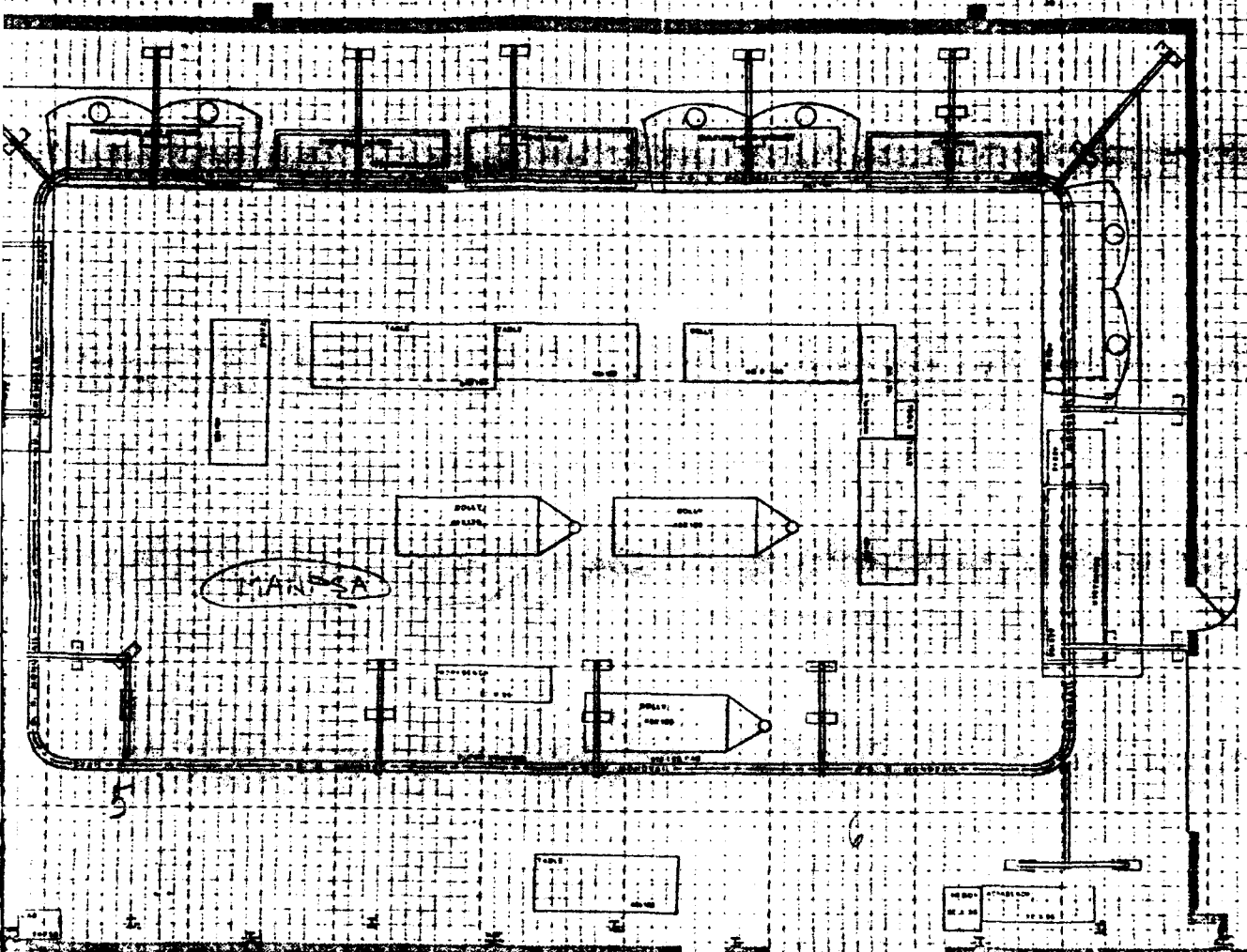


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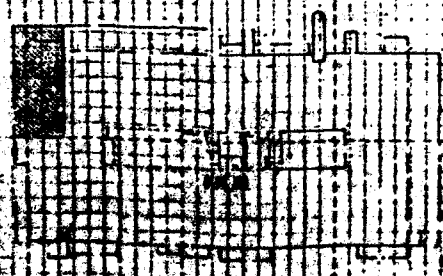


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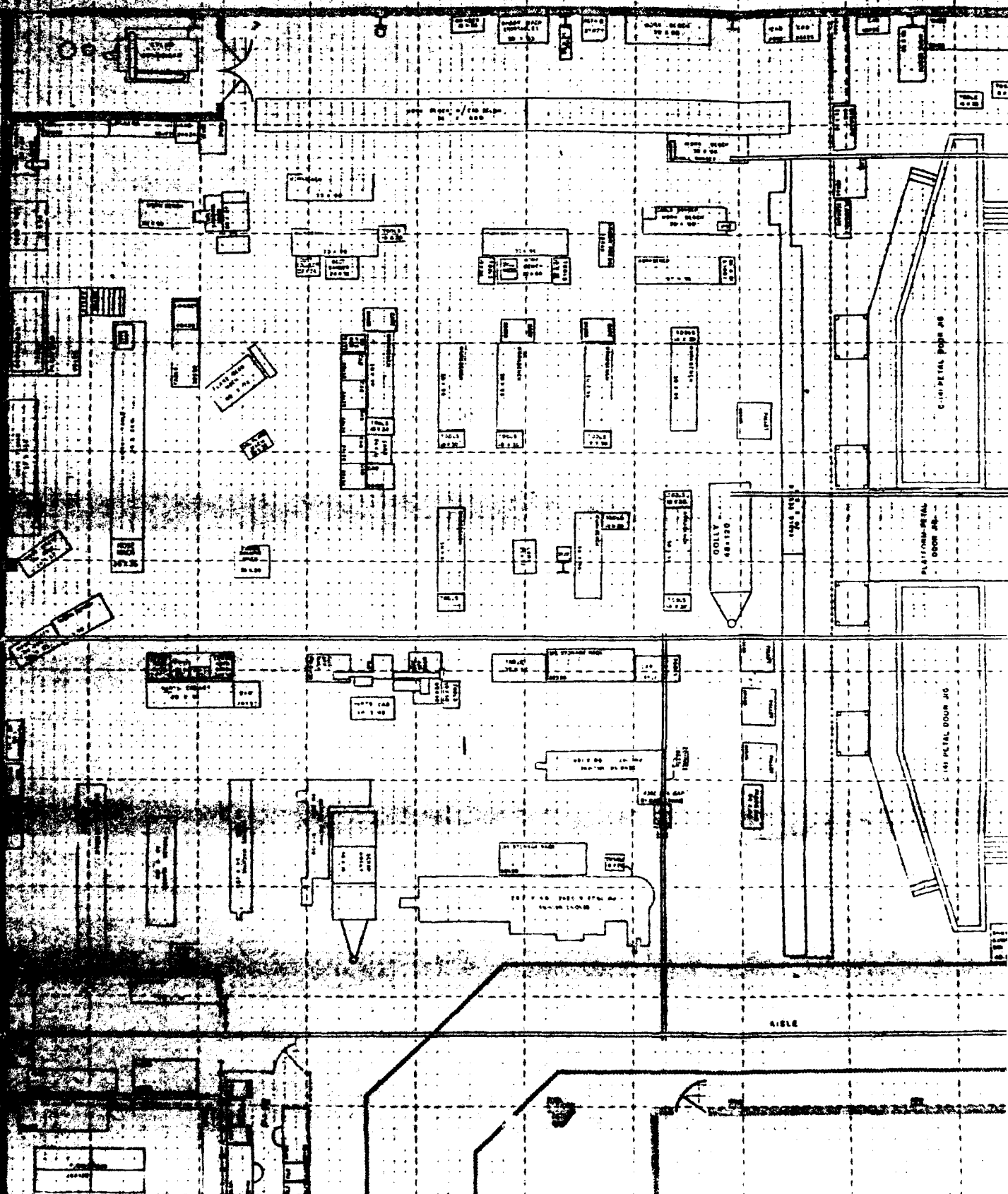


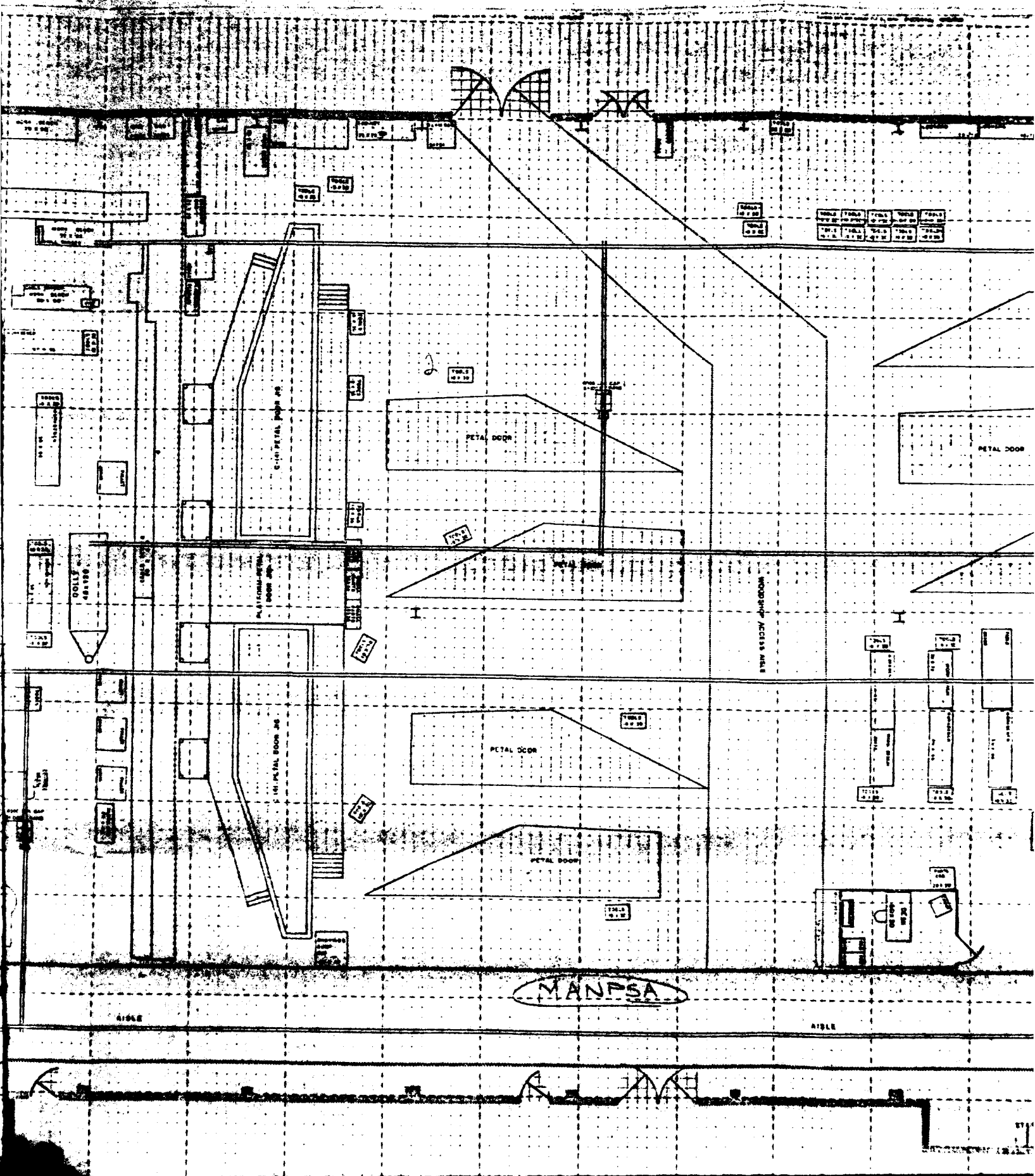


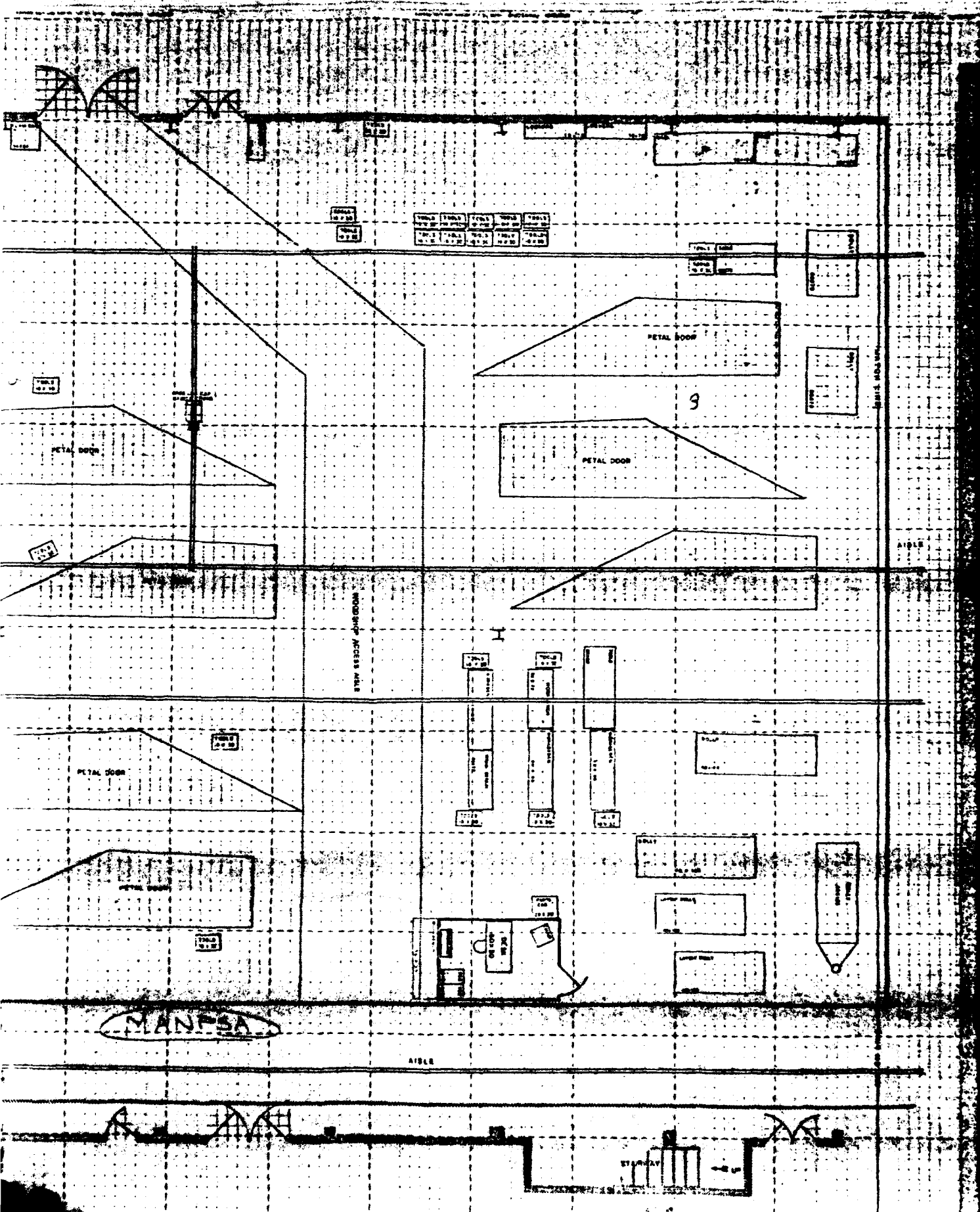
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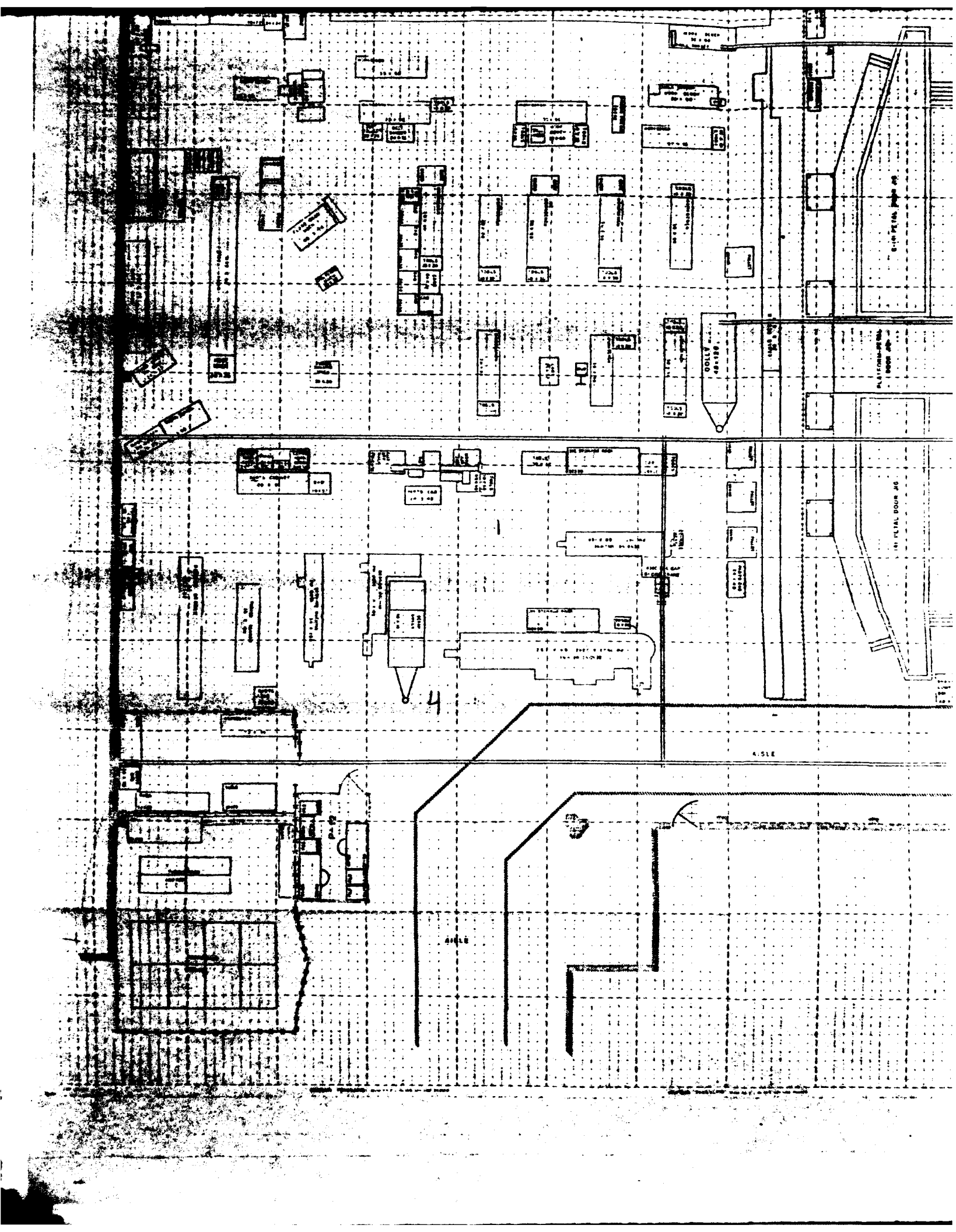
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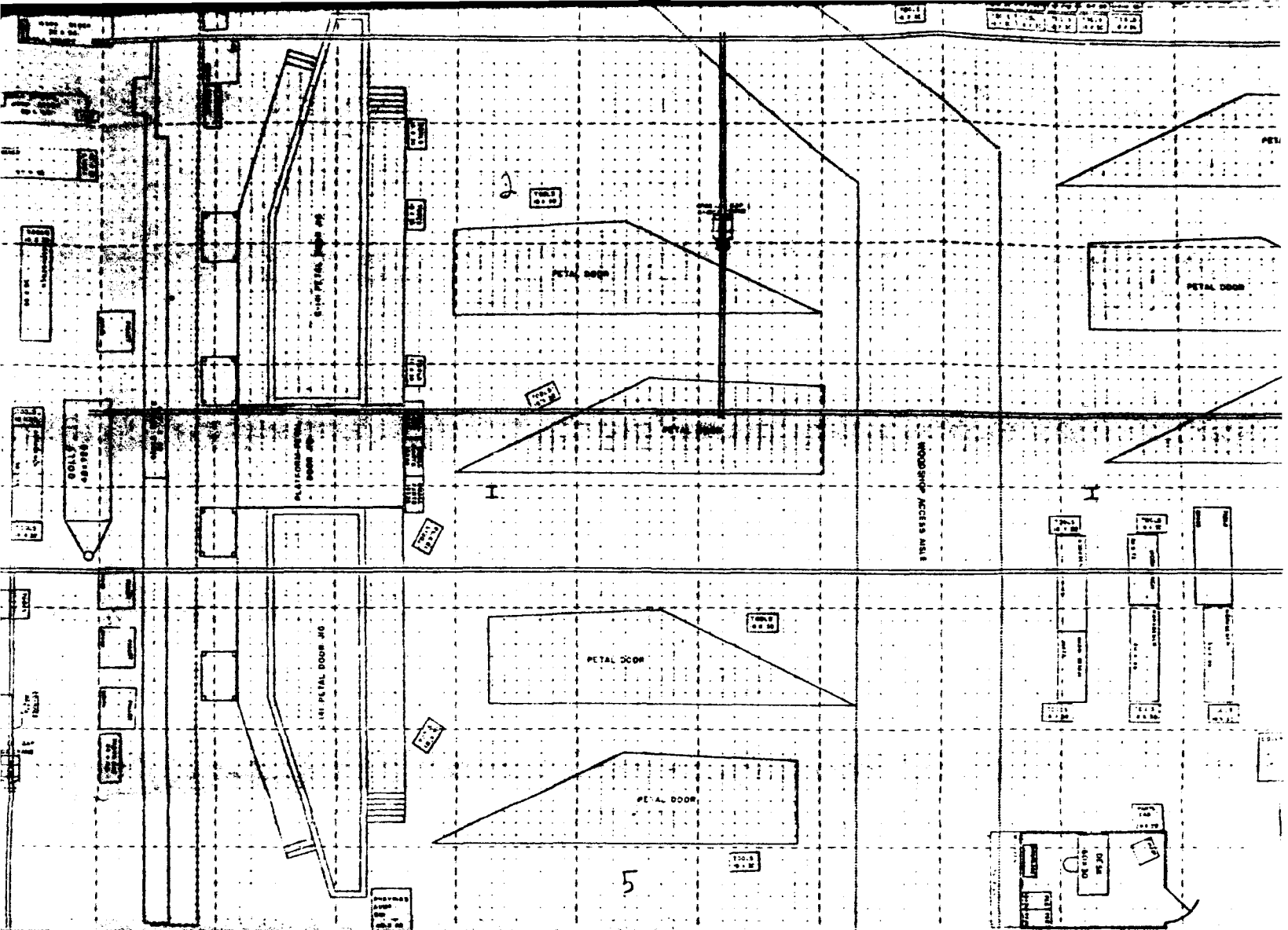




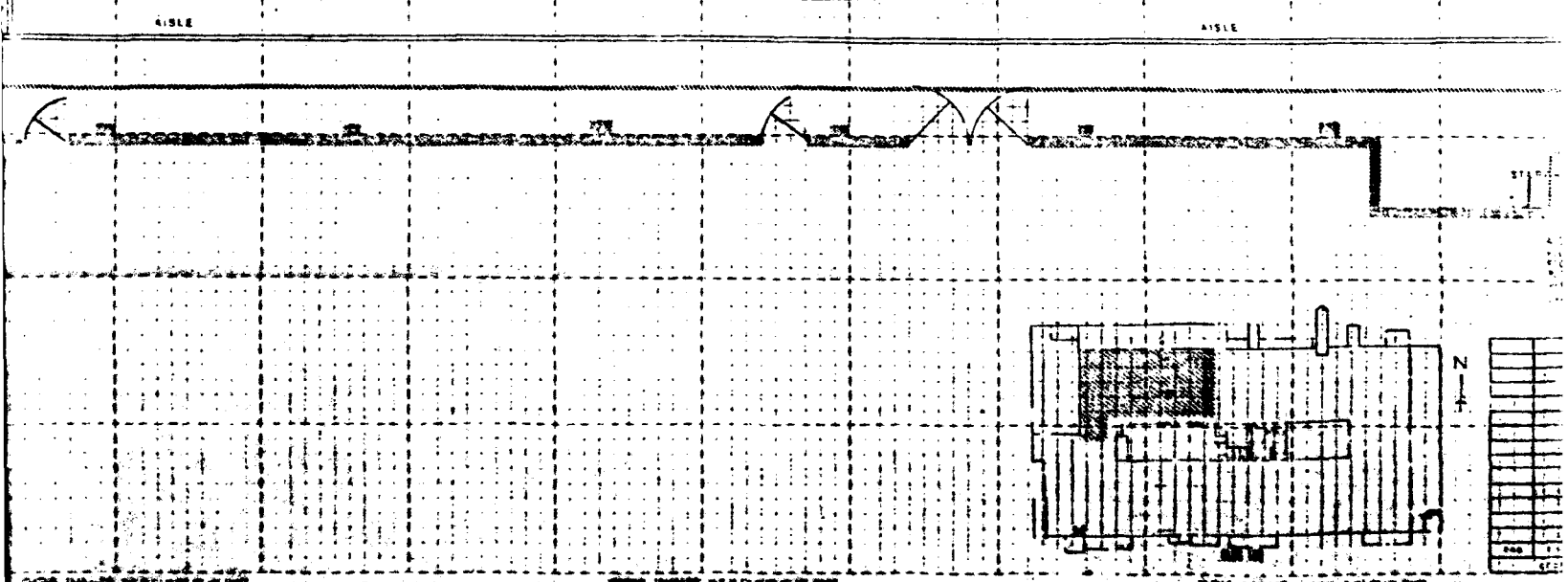


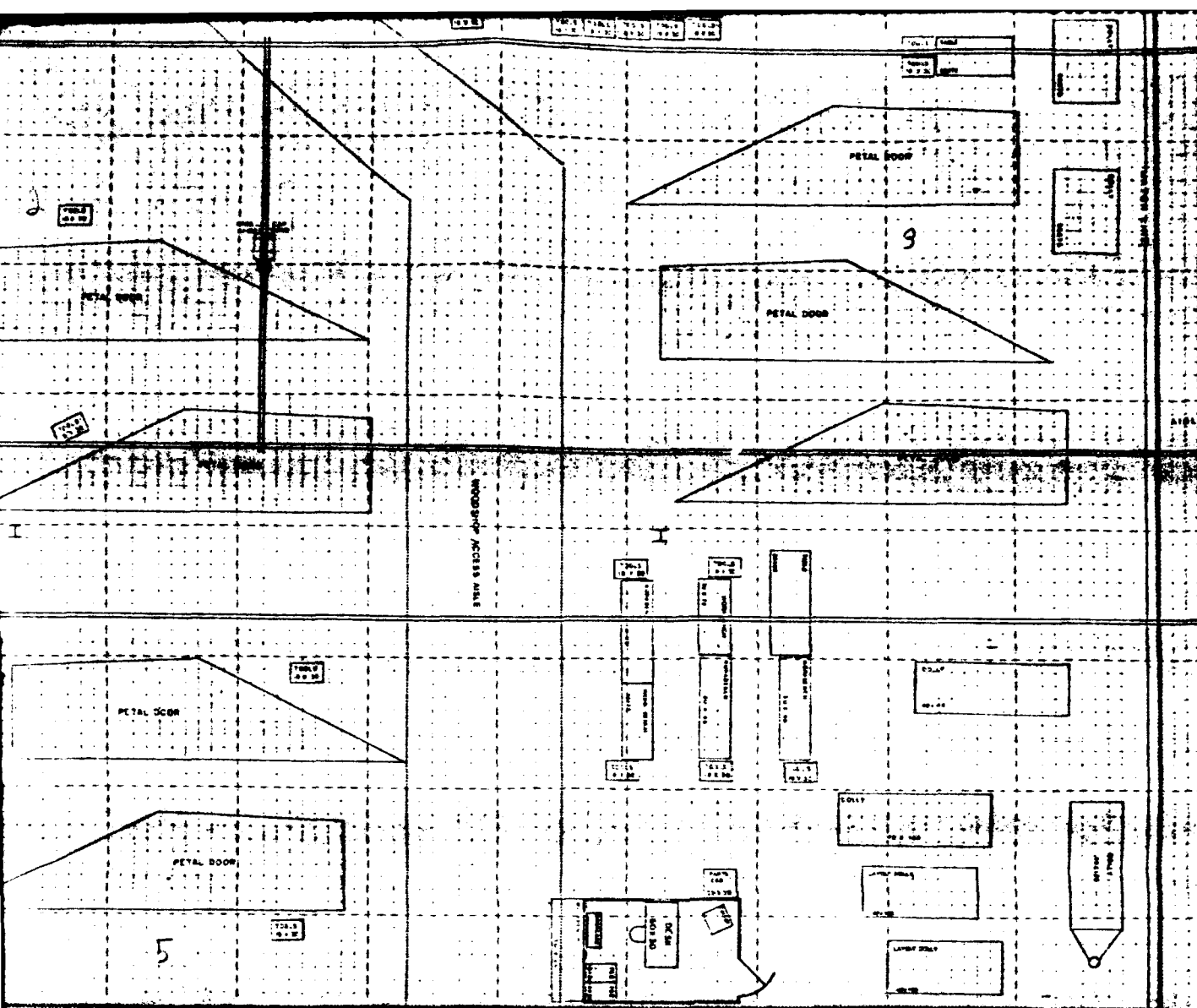
B-169 NORTHWEST END (11)



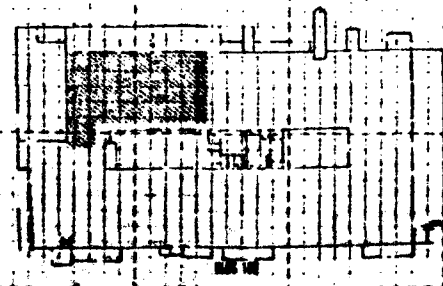
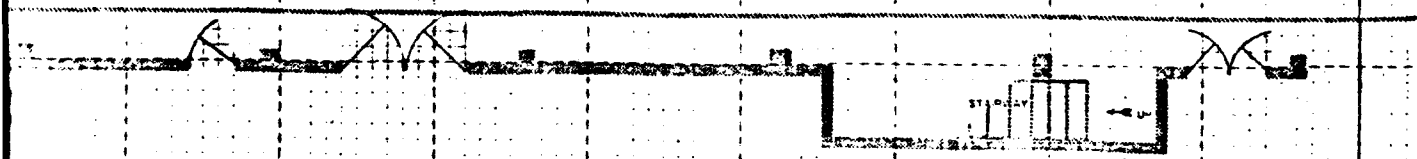


MANPSA





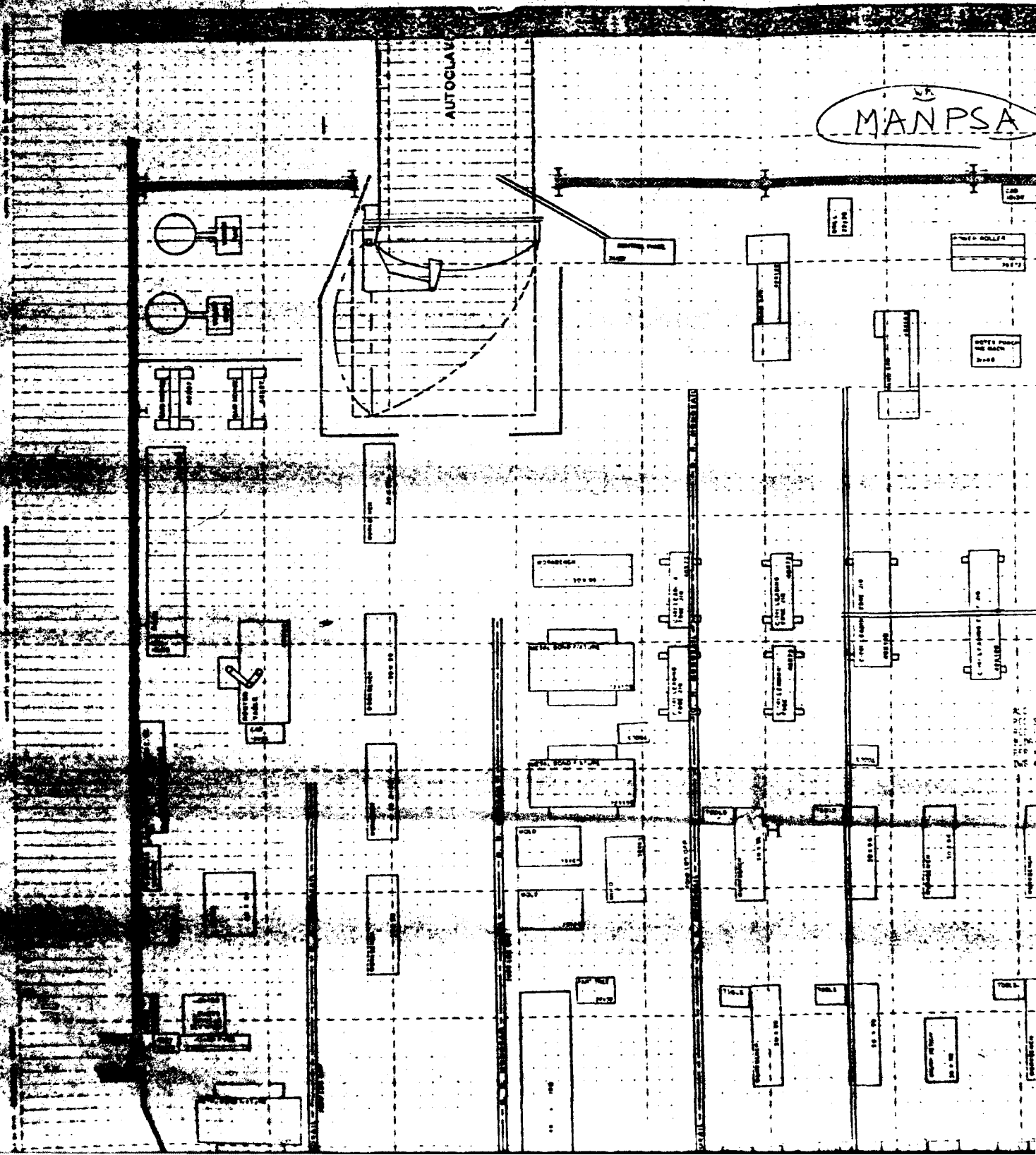
MANPSA



ST. 1000

Room	Area	Volume	Weight	Notes
ST. 1000	1000	1000	1000	
ST. 1001	1000	1000	1000	
ST. 1002	1000	1000	1000	
ST. 1003	1000	1000	1000	
ST. 1004	1000	1000	1000	
ST. 1005	1000	1000	1000	
ST. 1006	1000	1000	1000	
ST. 1007	1000	1000	1000	
ST. 1008	1000	1000	1000	
ST. 1009	1000	1000	1000	
ST. 1010	1000	1000	1000	

ST. 1001



B-100 NORTHEAST END 13

MANPSA

REC. NO. 100
REC. SECTION: MANPSA
REC. UNIT: MANPSA
BLDN: 360 SCALE:
RFP 033600-A-RM-0250
DIB #113

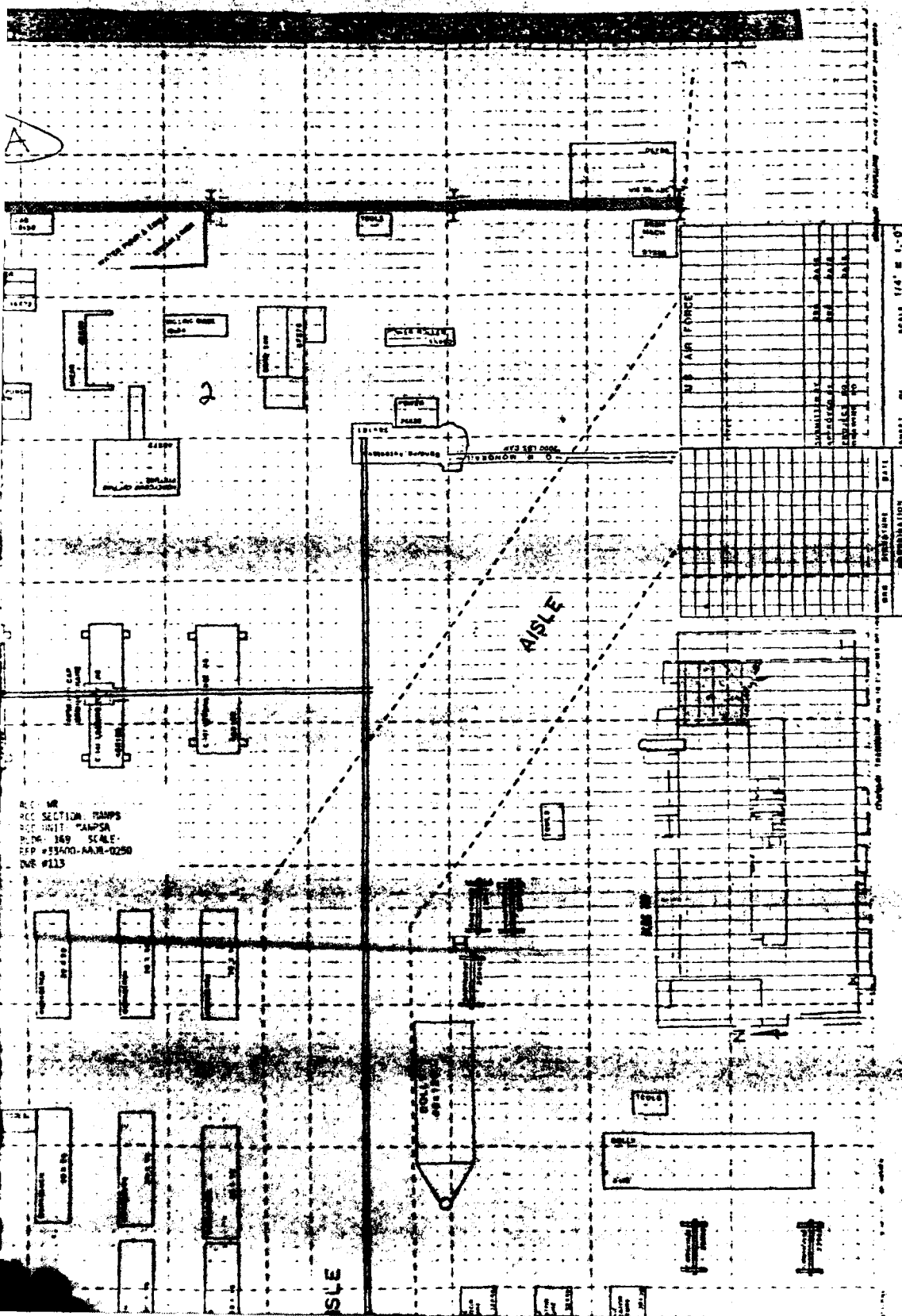
aisle

isle

SCALE 1/4" = 1'-0"

SECTION

PLAN



• AUT



REC: WR
REC SECTION: TRAPPS
REC UNIT: TRAPPSA
BLTH: 164 SCALE:
RFP #33400-ARJA-0250
DWG #113

ASLE

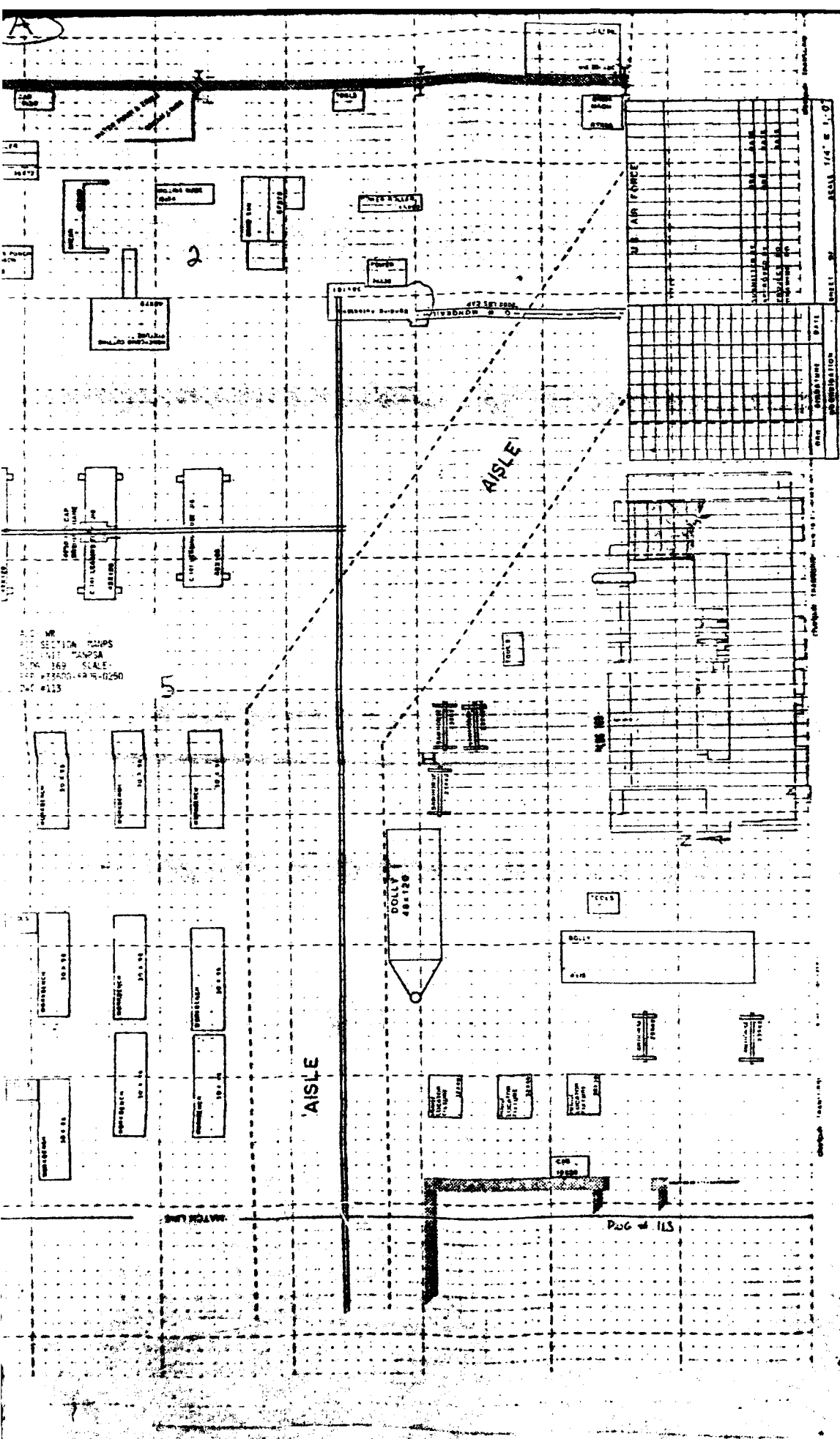
aisle

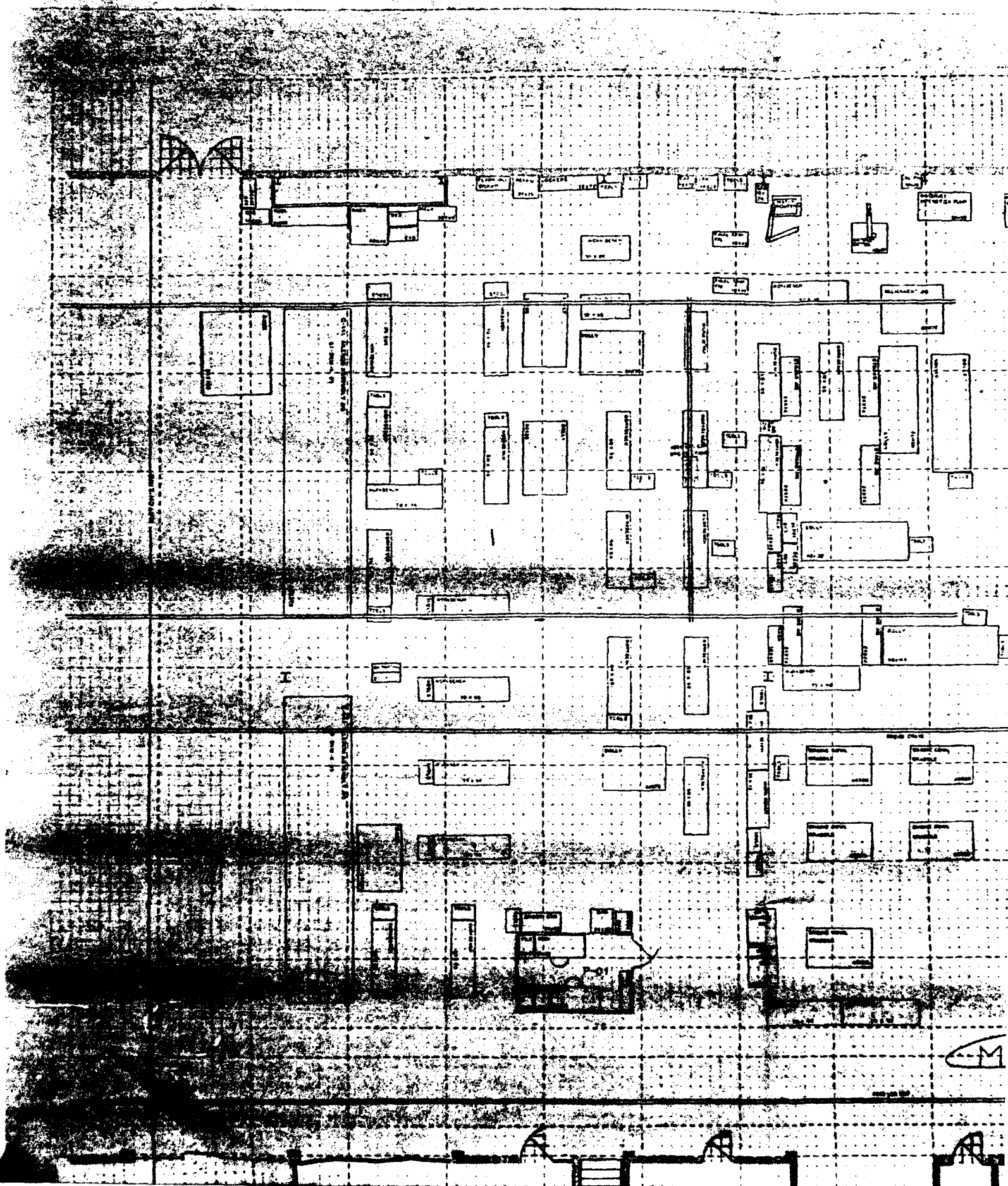
U.S. AIR FORCE

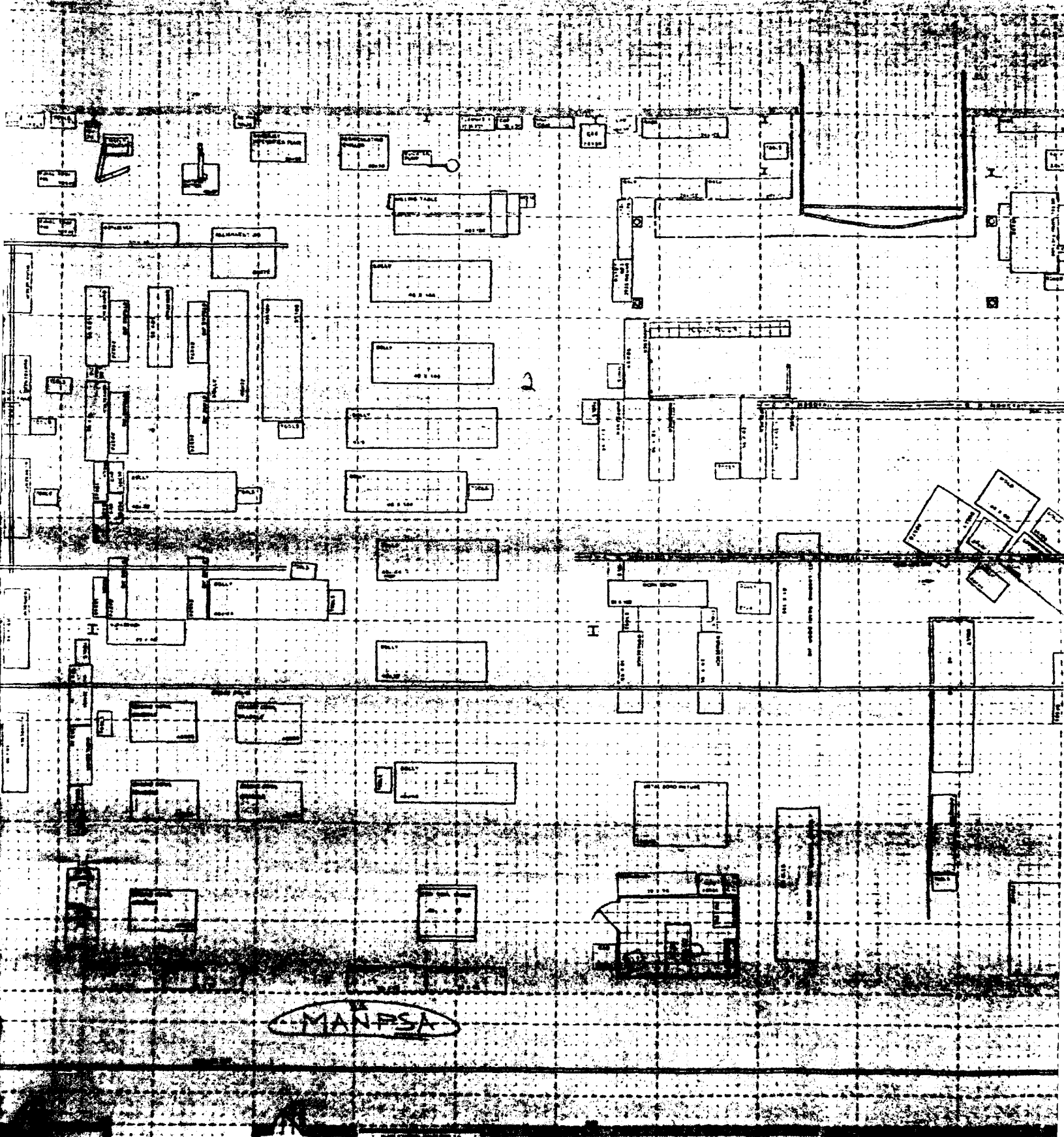
661 3076

DC.

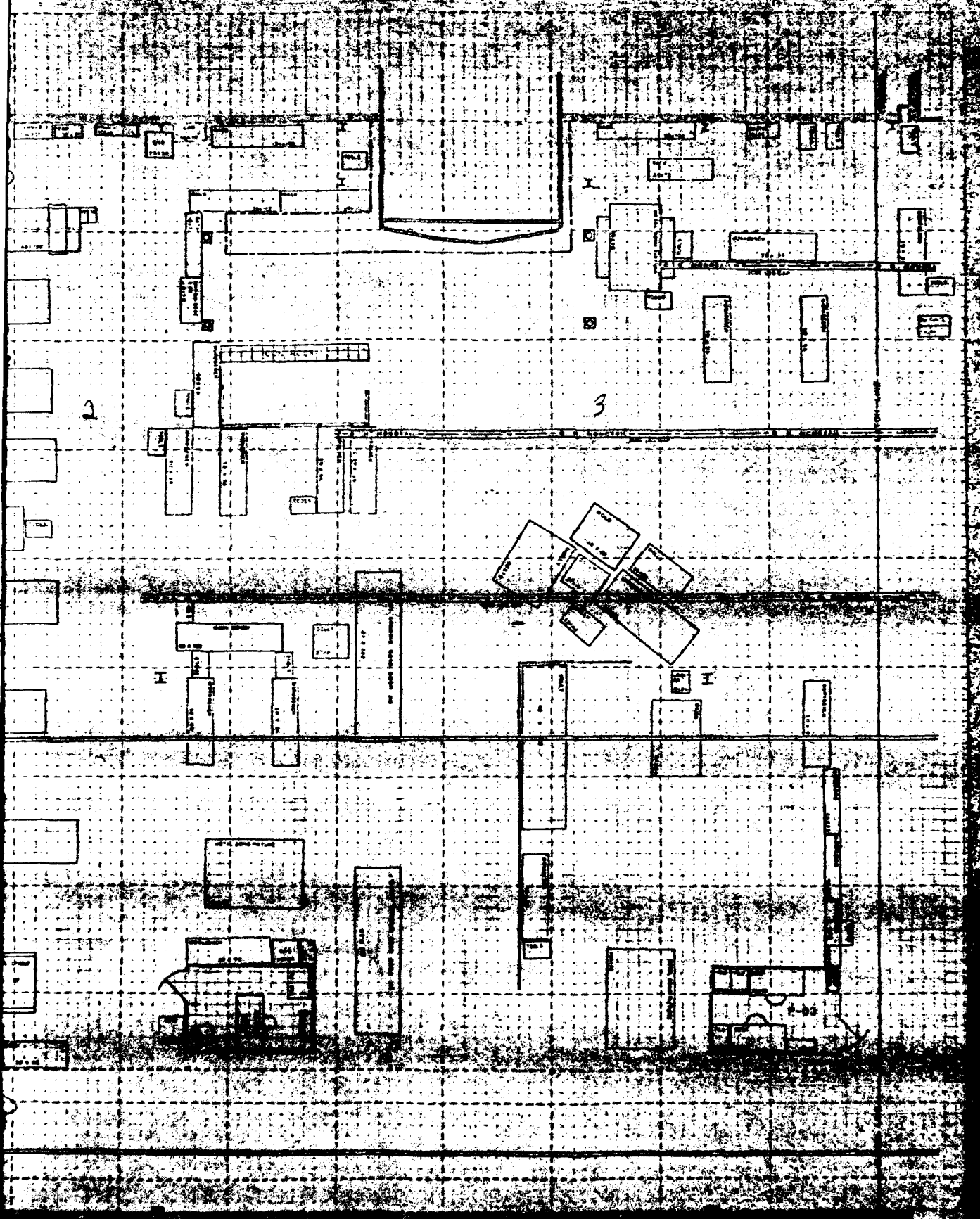
113



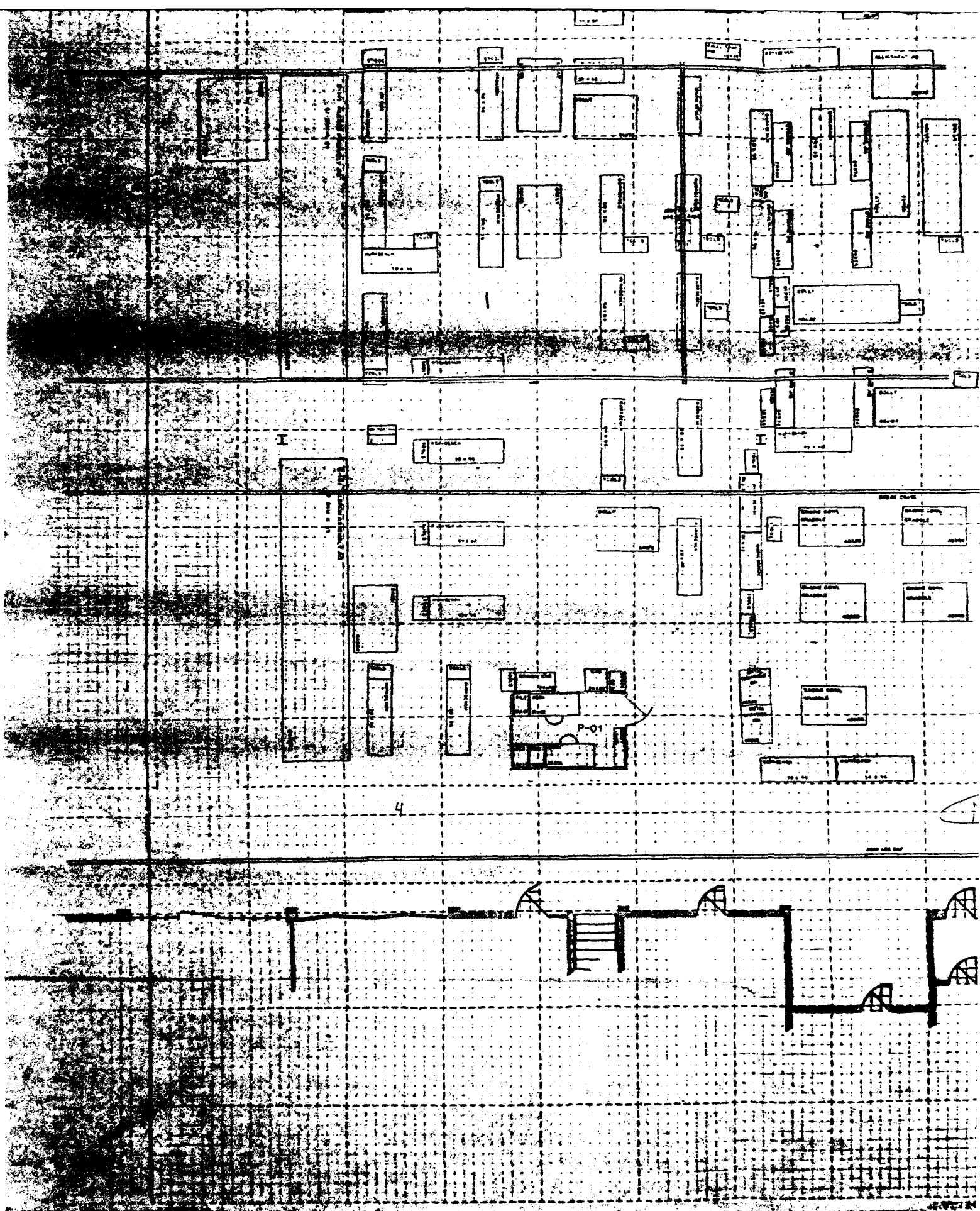


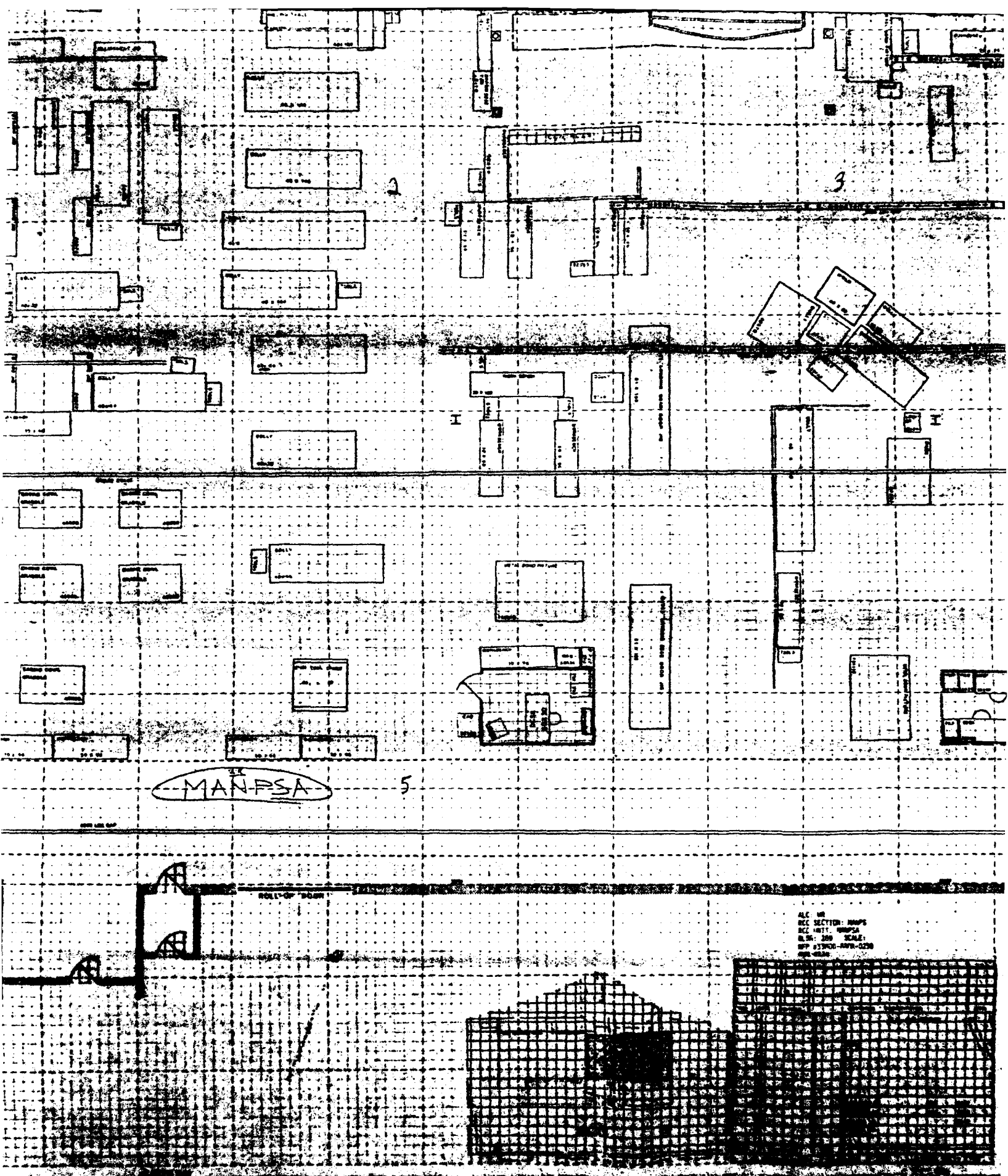


MANPSA



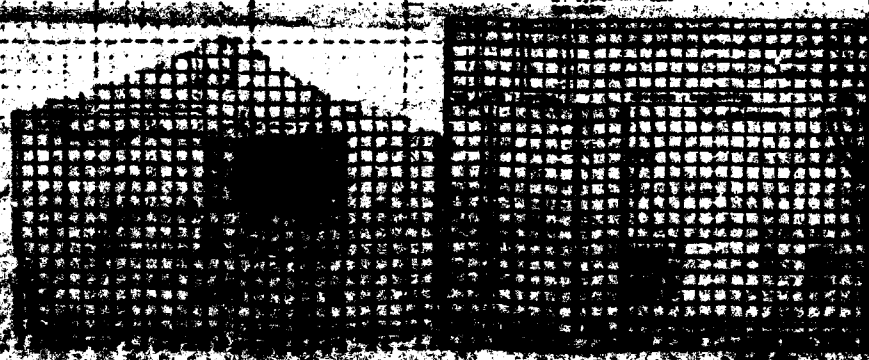
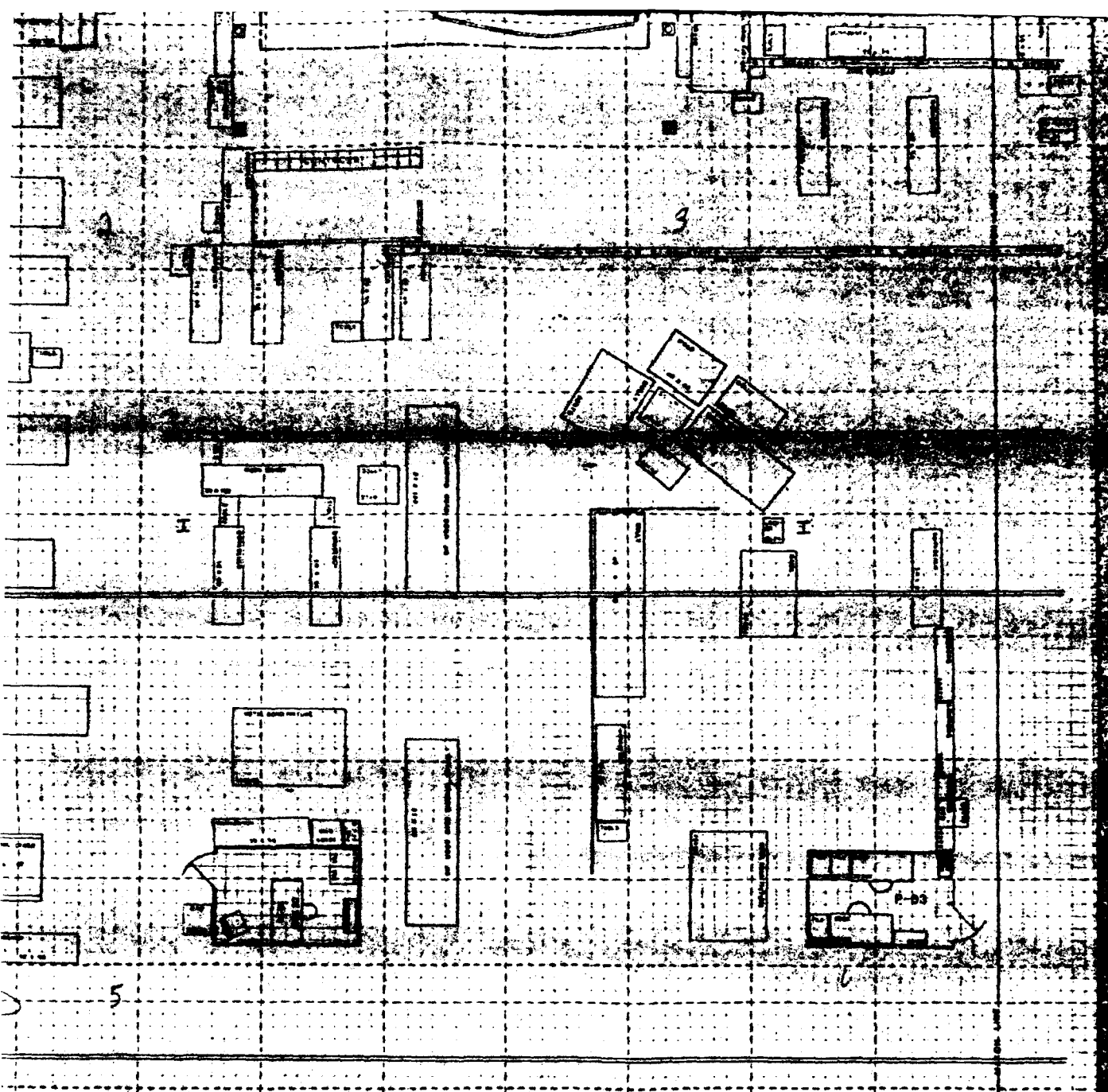
B-169 NORTHEAST CENTER 12

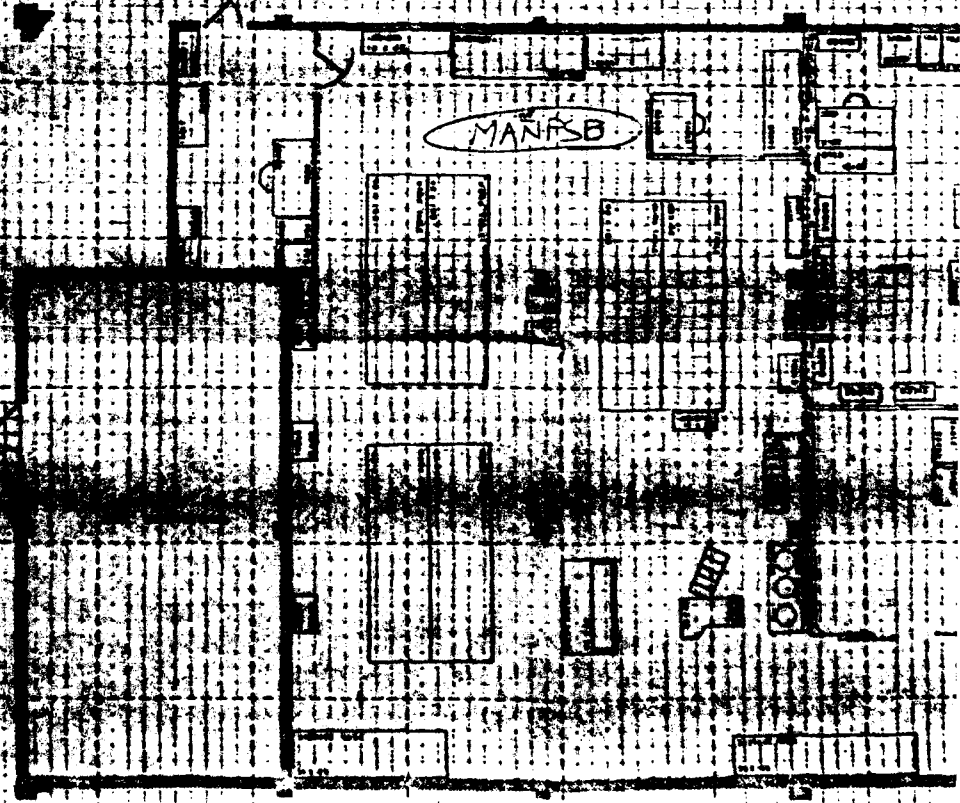
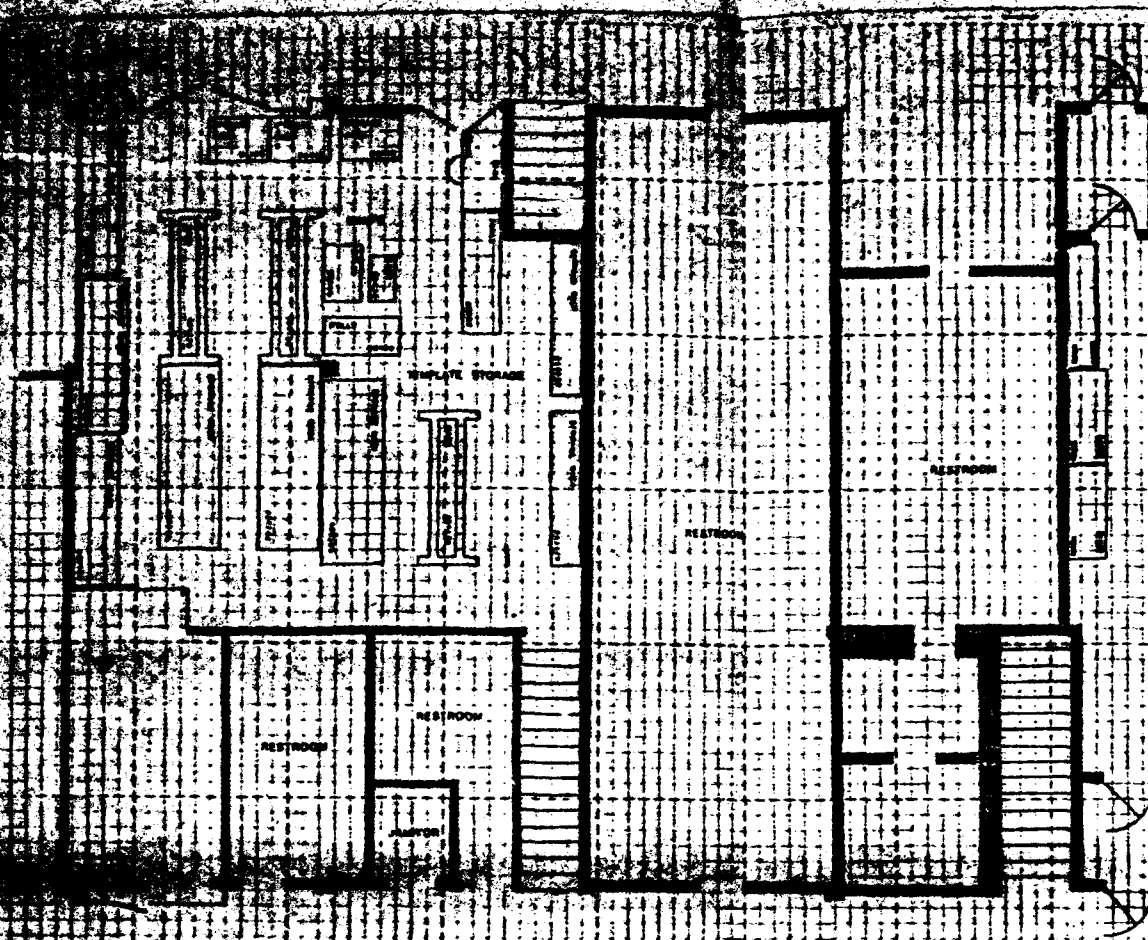


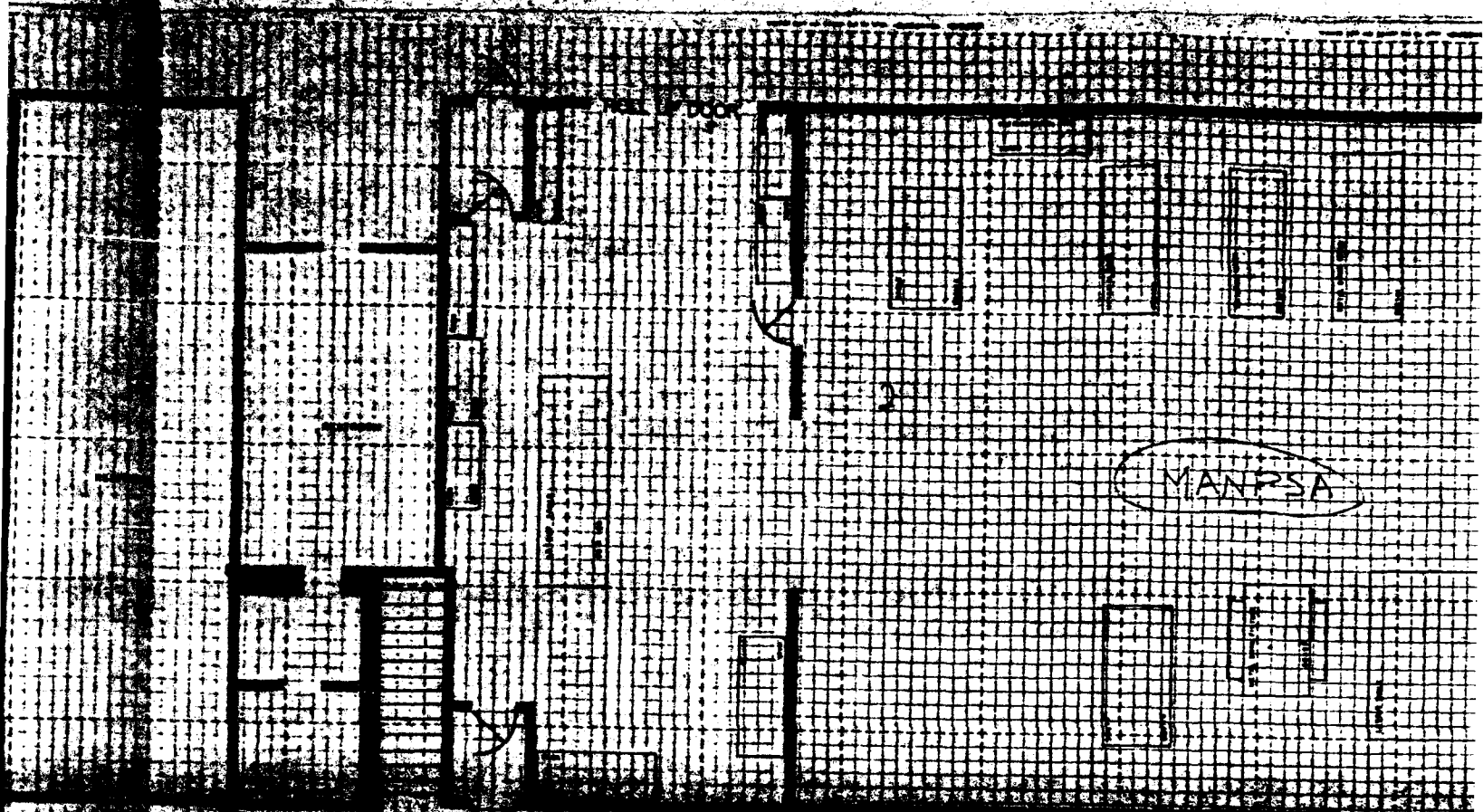


100 NORTH-EAST CENTER 12

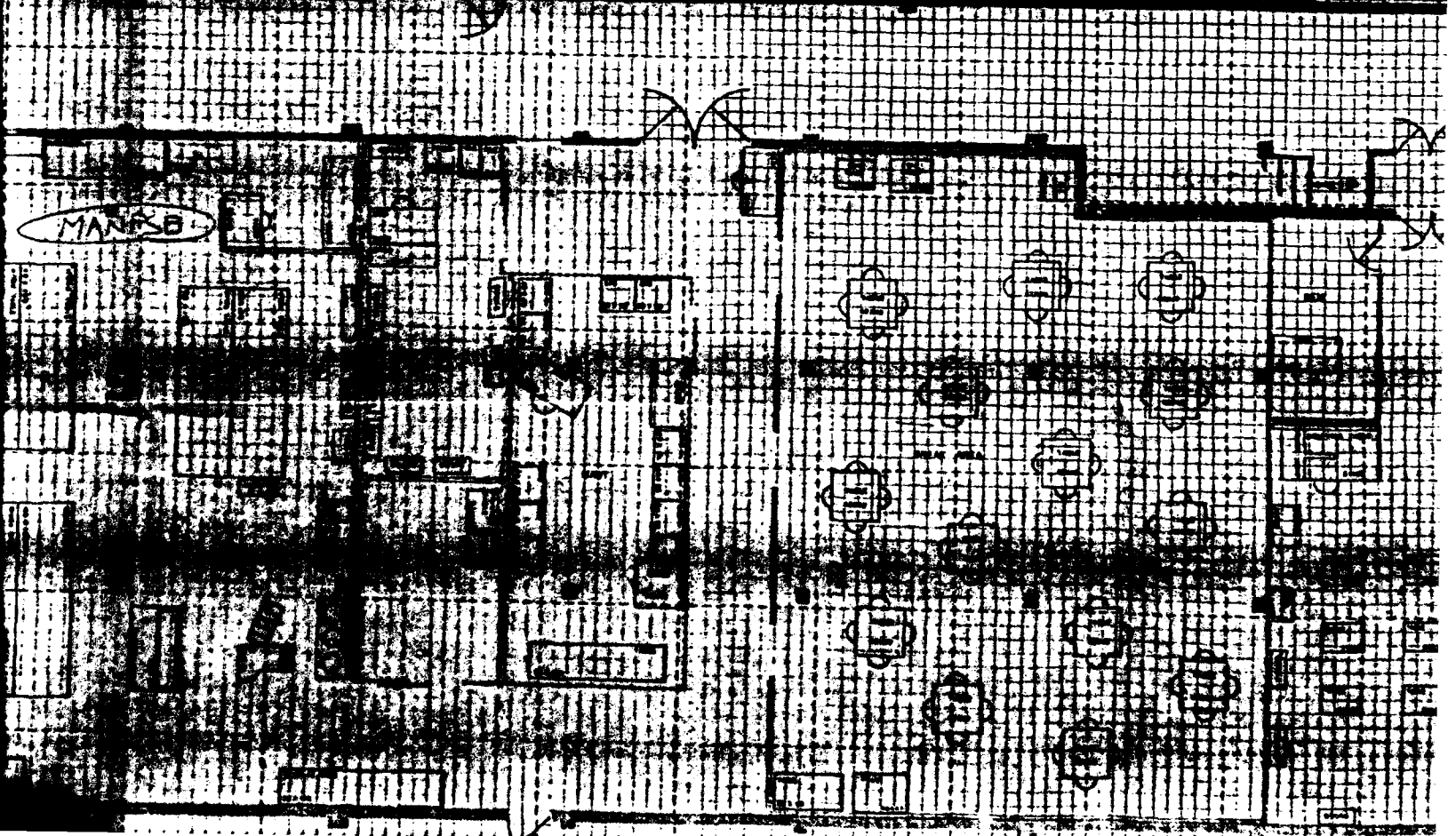
ALL IN
ONE SECTION: MAPS
ALL UNIT: MAPS
B. 101: 100 SCALE:
BPP 61300-1000-020
BPP 1000



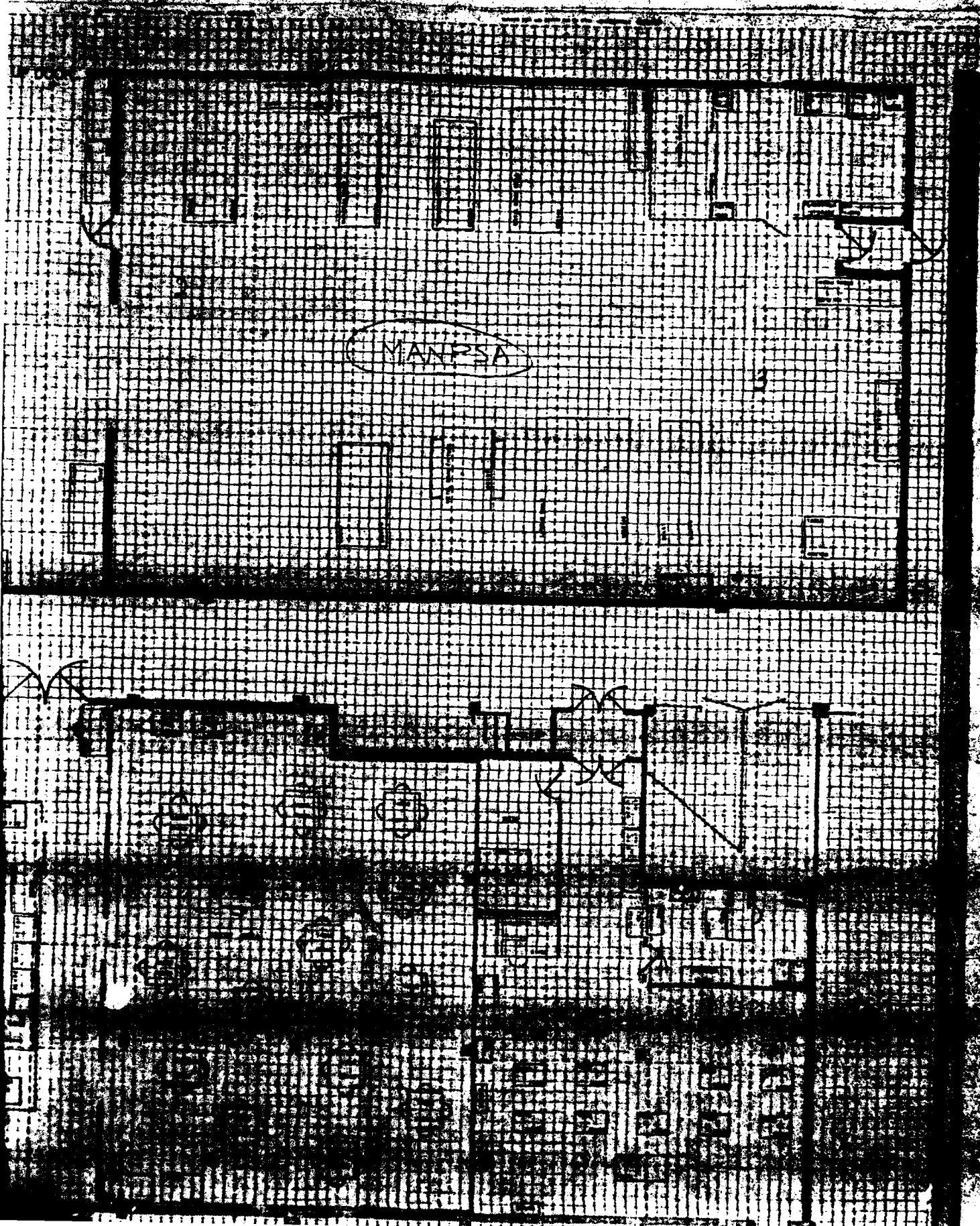




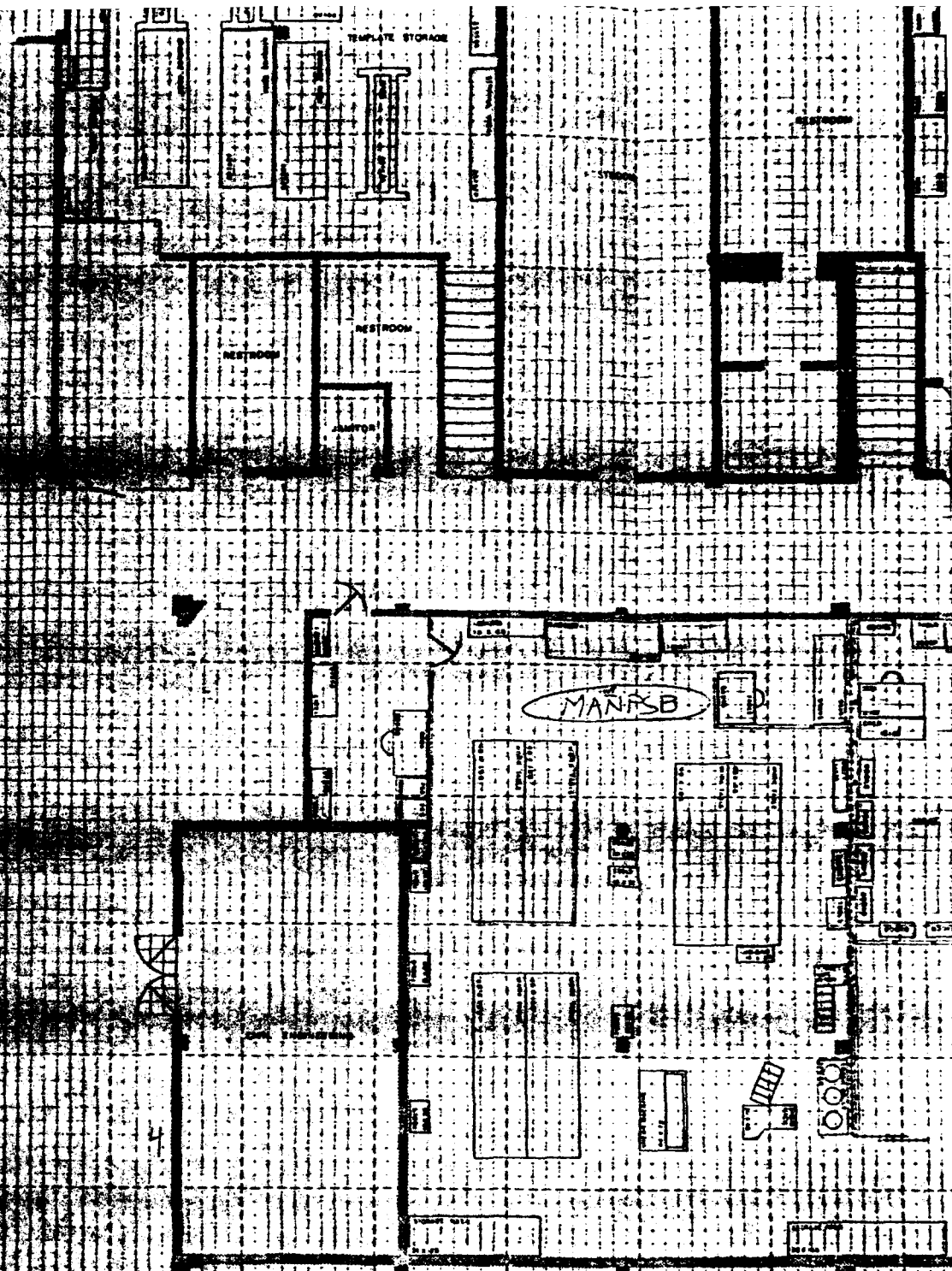
MANPSA

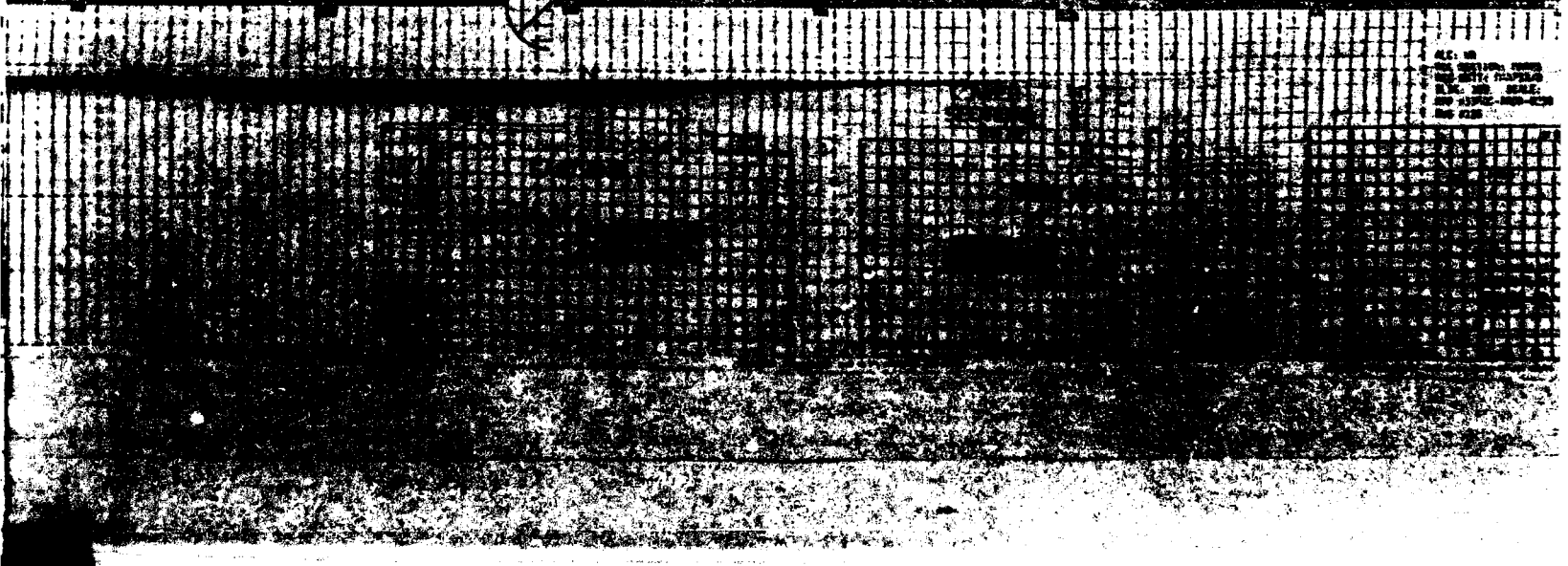
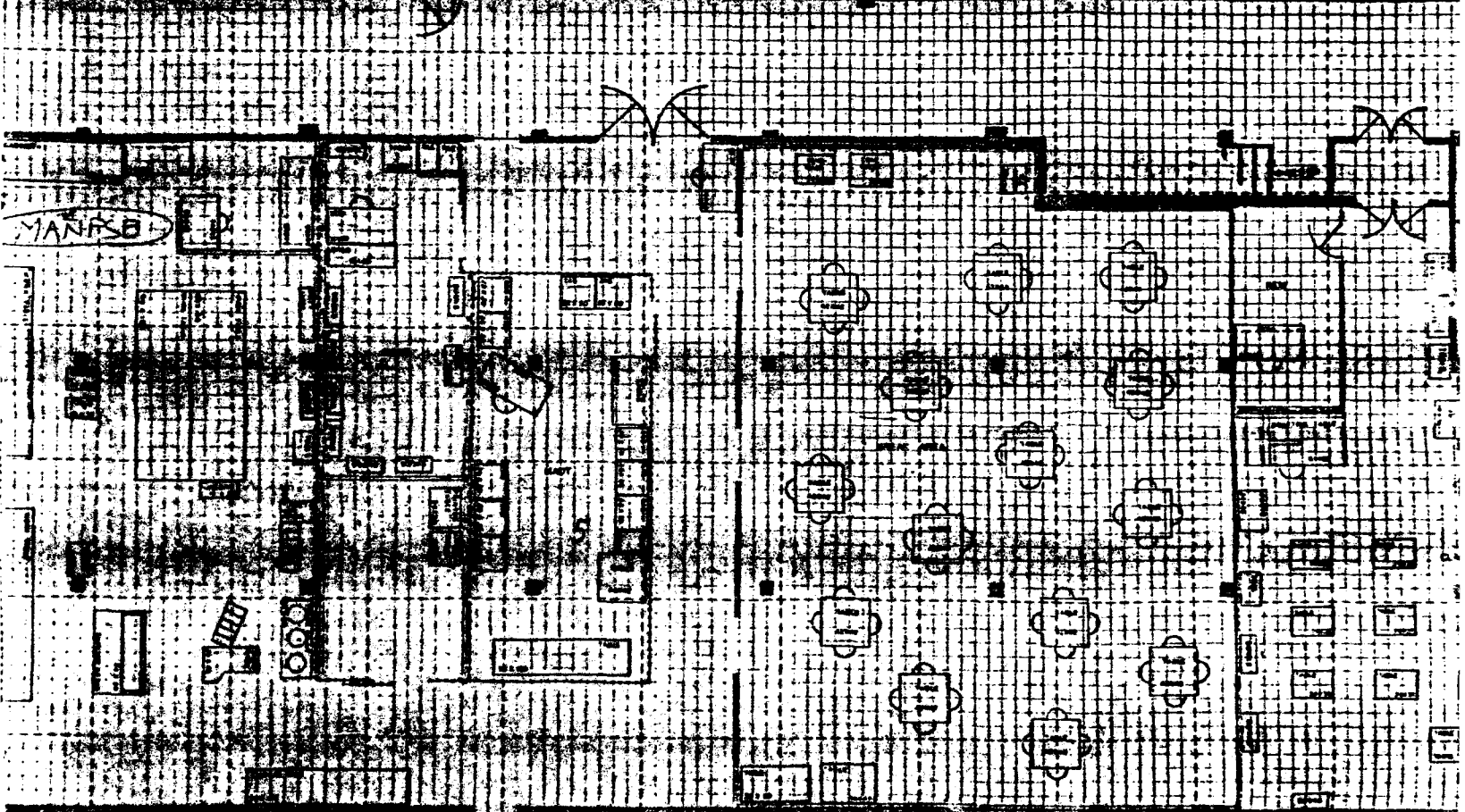
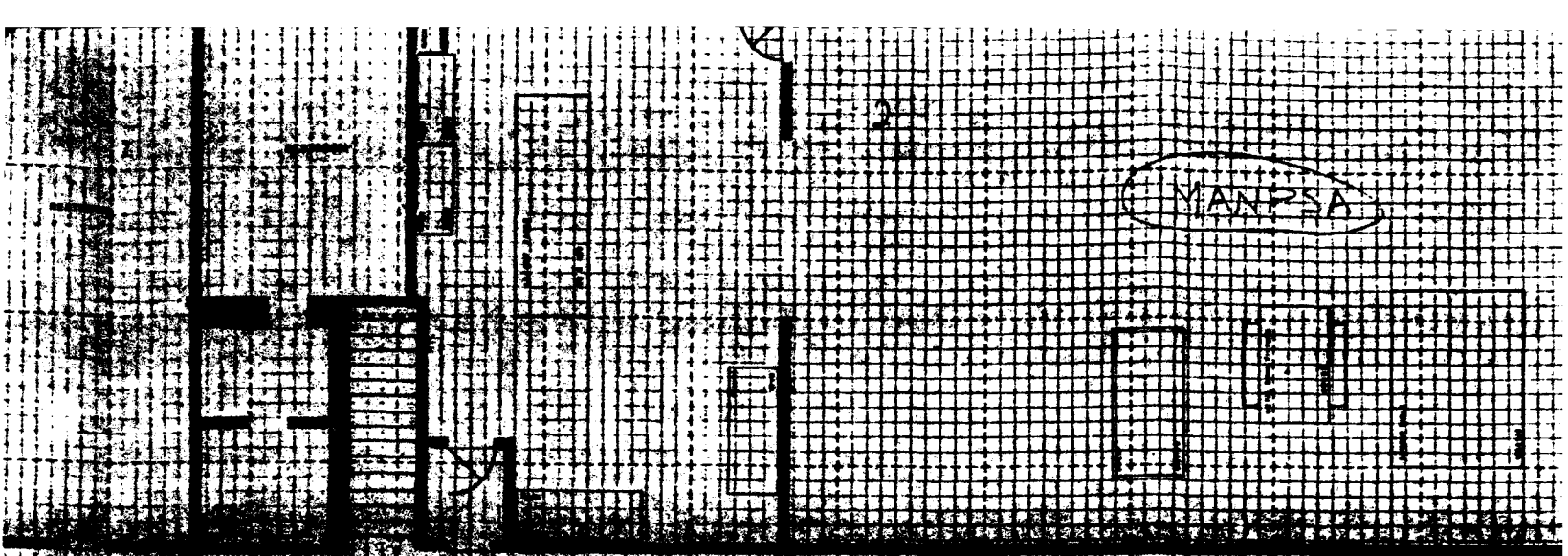


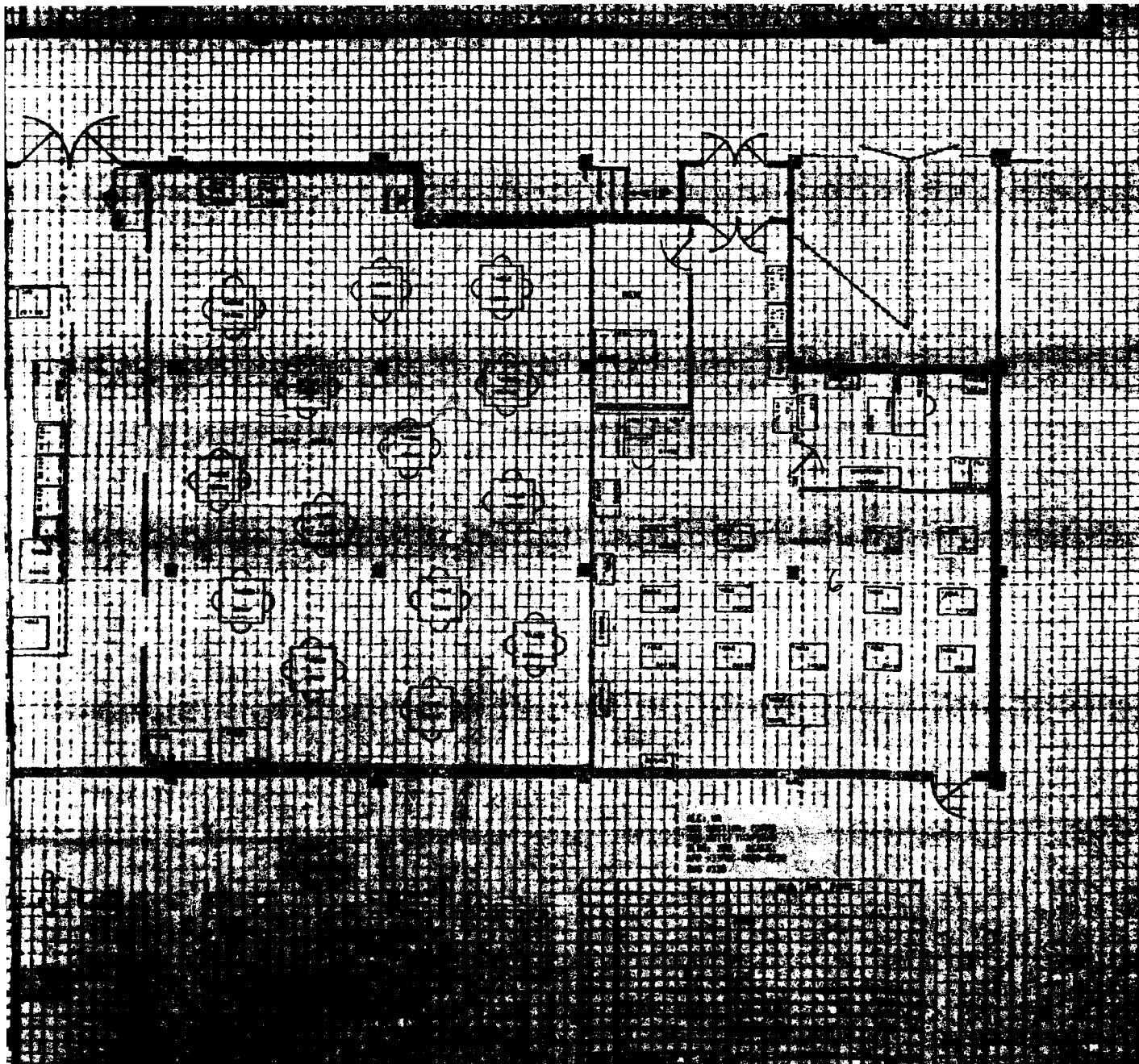
MANPSA



B-100 CENTER SECTION
(GROUND LEVEL)







ALC - WR	RCC - MANPSA	MODEL WORKLOAD FILE	7/ 5/1989		
01900A	MB006B	0 4 6 11 20 11	78.70	69.10	OA
F-15	.0	.0 .0 .0000 .0000	0	.047	B
05502A	MB017Y	0 0 17 15 22 23	483.50	420.20	OA
C-141	.0	.0 .0 .0000 .0000	0	.456	B
05502AA	MBA17Y	0 0 0 0 0 0	.00	18.20	OA
C-141	.0	.0 .0 .0000 .0000	0	.020	B
05502AC	MBC17Y	0 0 0 0 0 0	.00	.00	OA
C-141	.0	.0 .0 .0000 .0000	0	.000	B
05502AD	MBD17Y	0 0 0 0 0 0	.00	.00	OA
C-141	.0	.0 .0 .0000 .0000	0	.000	B
51334A	MB008B	0 4 0 3 3 5	92.80	65.00	1A
C-141	.0	.0 .0 .0000 .0000	0	.010	B
51352A	MB010B	0 4 74 26 54 26	25.40	26.60	1A
C-141	.0	.0 .0 .0000 .0000	0	.068	B
51418A	MB032B	0 4 10 13 13 8	134.30	117.10	2A
C-141	.0	.0 .0 .0000 .0000	0	.073	B
51454A	MB030B	0 4 8 9 8 10	556.90	642.00	OA
C-141	.0	.0 .0 .0000 .0000	0	.317	B
51454AA	MBA30B	0 4 0 0 0 0	.00	3.70	OA
C-141	.0	.0 .0 .0000 .0000	0	.002	B
51454AC	MBC30B	0 4 0 0 0 0	.00	.00	OA
C-141	.0	.0 .0 .0000 .0000	0	.000	B
51454AD	MBD30B	0 4 0 0 0 0	.00	16.00	OA
C-141	.0	.0 .0 .0000 .0000	0	.008	B
51454AE	MBE30B	0 4 0 0 0 0	.00	.00	OA
C-141	.0	.0 .0 .0000 .0000	0	.000	B

CONTROL NUMBERS BY RCC

	<u>RCC</u>	<u>C/N</u>	<u>NOUN</u>	<u>ORIGINALS</u>
	MNPSA	51454A 51455A	PETAL DOOR	19105
		01900A	BRAKEAER	9171
	(6) (4 ^{1/2})	51352A 51353A	DOOR	8342
		51418A 51419A	LEADING	6480 43098
11/23	ADD	05502A 05503A	AILERON	
		51334A	HORIZ. STABILIZER	
	MNPSC	06691A 06692A	COWLING R4L	97484
		50164A	SCUP	4032
		51402A	DR THRUST	3110
	5	50266A	ELEVATOR	2770
		50242A 50244A	FLAP	3504 110900
		(50454A)		
	MNPSD	03172A	CANOPY	49719
		51344A	NOZZEL	34626
		09193A F15	RADOME	21107
	(7) (6 ^{1/2})	41059A C130	RADOME ASSY	9310
		03427A	CANOPY	6900
		40208A C141	RADOME	5495 127157
11/23	ADD	51420A	LEADING EDGE	281155

SHEET METAL SHOP

BB
10/14/88

	<u>RCC</u>	<u>ORG HRS</u>	<u>80%</u>	<u>NO. OF HRS SELECTED FOR STUDY</u>
	MANPSA	53450	42760	43098 (81%)
	MANPSC	144209	115367	110900 (77%)
	MANPSD	156501	125200	127157 (81%)

CALCULATED FROM DOC. GORC AS OF 22 SEP 88 FOR RCC MANPS
AND ALLOCATED C/N'S FOR UNITS A, C & D.

BB
12/13

MANPSA DATA BOOK

C-141 Petal Door
C/N 51454A/51455A

F-15 Speed Brake
C/N 01900A

C-141 Access Door
C/N 51352A/51353A

C-141 Leading Edge
C/N 51418A/51419A

C-141 Aileron
C/N 05502A/05503A

C-141 Horizontal Stabilizer
C/N 51334A

SAS

EQUIPMENT PROFILE

NAME: BILL RICH

SHEET 1 OF L

RCC: MANPSA

DATE: 5-8-89

ALC: WR

NOTES

SOURCE

ALT

FOOTPRINT

MIN

MAX

MTBF

TIME

PREV MAINT

QUANT

AVAIL

S1

S2

S3

FRQ

2.0

180

1

1

90

11.0

75

10

100

175.0

90

1191

10

120

56.0

90

1190

10

365

1

90.0

365

1

90.0

180

2

24.0

180

2

24.0

1190

AUTOCLAVE

1

1

1

1

1

1

1

1

1

1

1

1191

AUTOCLAVE

1

1

1

1

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1

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1

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3774

JIG ASSY

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3874

JIG ASSY

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4325

JIG ASSY

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9450

AILERON JIG

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0570

AILERON JIG

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1

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1

1

R.H.

NAME: BILL BUCH

MANPOWER PROFILE

SAS

8:11 WEDNESDAY, APRIL 5, 1989

ALC: WR

DATE: 5-8-59

RCC: MANPSA

SHEET 7 OF 2

SK CODE	DESCRIPYIN QTR	QUANTITY AVAILABLE						AVAILABLE HRS (PER SHIFT)						ALTERNATE SKILL CD/LVL	NOTES			
		WORK WEEK 1	2	3	WEEK END 1	2	3	HOLIDAY 1	2	3	WEEK 1	2	3			HOLIDAY 1	2	3
✓ 47891	WG-1Q, MB 1	.	.	.	.	.	.	.	.	.	5.6	.	.	.	.	.		49533

49533 . LL CD/LVL NOTES

49533

50888 / 47891

50888/47891

50888/47871

50888 | 47891

5088 WG-05, SMH !

✓ 5088 WG-05, S11H

9A014 WG-10, SMM 1

49533

SAS

MANPOWER PROFILE

NAME: BILL BIGH

ALC: WR

DATE: 5-8-89

SHEET 2 OF 2

RCC: MANPSA

QUANTITY AVAILABLE
 WORK WEEK 1 2 3 1 2 3
 HOLIDAY 1 2 3

AVAILABLE HRS (PER SHIFT)
 WORK WEEK 1 2 3
 WEEK END 1 2 3

ALTERNATE
 SKILL CD/LVL NOTES

HOLIDAY 1 2 3

WEEK END 1 2 3

✓ 9A014 WG-10, SMM 4

5.6

6 1

49533

SHEET 2 OF 2

NOTES

NAME <u>BILL RICH</u>		WORKLOAD PROFILE		SAS		DATE <u>5-5-89</u>		RCC MANPSA		STD	
ITEM CODE	AIRCRAFT MODEL	WCD	ALC WR	WKL FLOAT TYP STOCK	INDUCTIONS PER QTR	Q1	Q2	Q3	Q4	NO OF FPS	MAX WIP
✓ PCN 51454A	C-141	MBF30B		4	-	-	-	-	-	-	-
✓ PCN 51454A	C-141	MBG30B		4	-	-	-	-	-	-	-
✓ PCN 51454A	C-141	MBH30B		4	-	-	-	-	-	-	-
✓ PCN 51454A	C-141	MBI30B		4	-	-	-	-	-	-	-
✓ PCN 51454A	C-141	MBJ30B		4	-	-	-	-	-	-	-
✓ PCN 51454A	C-141	MBQ30B		4	-	-	-	-	-	-	-
✓ PCN 51454A	C-141	MBDA1B		4	-	-	-	-	-	-	-
✓ PCN 51454A	C-141	MB030B		4	-	8	9	8	10	-	-

502

PETAL DOOR

DATASET: I7S150ED.ALC.WRMANPSA.WORKLD

START
COL

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

C-141 Petal Door
C/N 51454A/51455A

Operation Profile ✓

Disassembly/Assembly Profile ✓

In/Out

Process Flow

Operation Description

OPERATION FILE

NAME BILL RICH ALC DATE 4-15-89 ICC MANPSA SHEET 1 OF 1

OPERATION NUMBER	ICC	OPERATION DESCRIPTION	MANDATORY OCCURRENCE FACTOR	OPERATION TYPE	MANDATORY FLOW		MANPOWER		EQUIPMENT		TIME REQUIRED HRS.	DATA SOURCE COMMENTS
					%	HRS.	QTY.	%	HRS.	QTY.		
0000	MANPSA	REC	1.00	TRANSIT								L. JACKSON (ALTERNATE) 926-4812
				SETUP								M. MORRISON (PLANNER)
				PROCESS	1.0		1	0.1				
010	MANPSA	REV	1.00	TRANSIT								T.O. IC - 141B-3 & APPLICABLE DRAWINGS
				SETUP								
				PROCESS	1.0		1	1.0				
				TRANSIT								
				SETUP								
				PROCESS								
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C-11, PETAL DOOR

WCD	ALC	DATE	WCD	DATE
MB0308	WR		88064	

BILL RICH

[illegible]

SAS

OPERATION PROFILE

NAME BILL RICH

ITEM CD PCN 51454A

ALC WR

DATE 5-5-89

RCC MANPSA

WCD MB030B WCD DATE 88064

OPER NUMB
RCC
MANPSA DIS

OPER DESC
DIS

HIST MAND OPER
OCCR TYPE

EQUIP CODE

QTY

NOTES

90 MANPSA DIS 0.95 1.0 T 1.0 19533 1.0 1.0

90 MANPSA DIS 1.0 S 0.

90 MANPSA DIS . P 0. 47891 2 12.5

90 MANPSA DIS . P 0. 49533 2 12.5

100 MANPSA PROC 0.95 1.0 T 0.

100 MANPSA PROC 1.0 1.0 S 0.

100 MANPSA PROC . P 0. 47891 2 1.3

100 MANPSA PROC . P 0. 49533 2 1.3

110 MANPSA INS 0.95 1.0 T 0.

110 MANPSA INS 1.0 1.0 S 0.

11C MANPSA INS . P 0. 47891 1 4.0

110 MANPSA INS . P 0. 49533 1 4.0

120 MANPSA PROC 0.95 1.0 T 0.

INSPECT HYD. TUBING -
REPLACES AS REQUIRED.
TO IC-141B-3

CLEAN & PREPARE
FOR INSPECT. FOR
FRAME ASSY.

SUPPLEMENTAL
WCD MBH30B

SAS

OPERATION PROFILE

NAME BILL RICH

ITEM CD PCN 51454A

ALC WR

WCD MB030B

DATE

5-5-89

WCDDATE 88064

WCD MB030B

ALC WR

WCD MB030B

WCDDATE 88064

WCD MB030B

EQUIP CODE

% HRS

QTY

CD/LVL

F HRS

MAND

OCGR

TYPE

PROC

S

150

MANPSA

PROC

150

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

150

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

150

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

160

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

160

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

160

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

160

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

170

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

170

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

170

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

170

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

170

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

170

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

180

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

180

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

180

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

180

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

180

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

% HRS

NOTES

180

MANPSA

PROC

1.00

T

Q

47891

2

0.5

4325

1

0.5

QTY

SAS

OPERATION PROFILE

NAME	ITEM CD	PCN	51454A	WCD	MB030B	WCDDATE	88084	ALC	WR	DATE	RCC	MANPSA	NOTES
OPER	NUMB	RCC	DESC	OPER	MAND	SKILL	CD/LVL	QTY	%	HRS	QTY	%	HRS
210	MANPSA	PROC	.	P	Q	47891	2	.	0.8	4325	1	.	0.8
210	MANPSA	PROC	.	10 P	Q	49533	2	.	0.8		.	.	.
220	MANPSA	PROC	1.00	.	T	Q		.	.	.	.	.	.
220	MANPSA	PROC	.	.	S	Q		.	.	.	.	.	.
220	MANPSA	PROC	.	.	P	Q	47891	2	.	0.8	4325	1	0.8
220	MANPSA	PROC	.	10 P	Q	49533	2	.	0.8		.	.	.
230	MANPSA	PROC	1.00	.	T	Q		.	.	.	.	.	.
230	MANPSA	PROC	.	.	S	Q		.	.	.	.	.	.
230	MANPSA	PROC	.	.	P	Q	47891	2	.	0.5	4325	1	0.5
230	MANPSA	PROC	.	10 P	Q	49533	2	.	0.5		.	.	.
240	MANPSA	PROC	1.00	.	T	Q		.	.	.	.	.	.
240	MANPSA	PROC	.	.	S	Q		.	.	.	.	.	.
240	MANPSA	PROC	.	10 P	Q	47891	2	.	0.5		.	.	.

9:46 TUESDAY, MARCH 28, 1989 71

SHEET 8 OF 20

OPERATION PROFILE SAS

OPERATION PROFILE																		
NAME	ITEM CD	PCN	51454A	ALC	WR	WCD	MB030B	WCDDATE	88064	DATE	QTY	%	HRS	EQUIP	CODE	QTY	%	HRS
OPER	NUMB	RCC	OPER	HIST	MAND	OPER	MAND	SKILL	CD/LVL									
			DESC	OCCR	OCCR	TYPE	F	HRS										
240	MANPSA	PROC		1.0	P	0.	49533	2	0.5	4325	1	0.5						
250	MANPSA	PROC		1.00	T	0.												
250	MANPSA	PROC			S	0.												
250	MANPSA	PROC			P	0.	47891	2	0.3									
250	MANPSA	PROC		1.0	P	0.	49533	2	0.3	4325	1	0.3						
260	MANPSA	DIS		0.95	T	0.												
260	MANPSA	DIS		1.00	S	0.												
260	MANPSA	DIS			P	0.	47891	1	1.5									
260	MANPSA	DIS			P	0.	49533	1	1.5									
270	MANPSA	PROC		0.95	T	0.												
270	MANPSA	PROC		1.00	S	0.												
270	MANPSA	PROC		1.00	P	0.	47891	2	25.0									

SEE
SUPPLEMENTAL
WCD

MBA 30B

SEE
SUPPLEMENTAL
WCD
MBH 30B

SHEET 9 OF 20

OPERATION PROFILE SAS

NAME

ITEM CD PCN 51454A

OPER NUMB

RCC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

MANPSA PROC

ALC WR

WCD MB030B

WCD DATE 88064

HIST MAND OPER

OCCR TYPE

P

T

S

P

P

T

S

P

T

S

P

T

S

P

T

S

P

T

S

P

T

S

P

T

S

P

T

S

P

T

DATE

WCD DATE 88064

HIST MAND OPER

OCCR TYPE

P

T

S

P

T

S

P

T

S

P

T

S

P

T

S

P

T

S

P

T

S

P

T

S

P

T

S

P

T

EQUIP CODE

25.0

2

49533

47891

49533

47891

49533

47891

49533

47891

49533

47891

49533

47891

49533

47891

49533

47891

49533

47891

49533

47891

49533

47891

49533

47891

49533

47891

49533

47891

49533

47891

49533

47891

RCC MANPSA

QTY

%

HRS

2

47.0

47.0

47.0

47.0

47.0

47.0

47.0

47.0

47.0

47.0

47.0

47.0

47.0

47.0

47.0

47.0

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47.0

47.0

47.0

47.0

47.0

47.0

47.0

47.0

47.0

47.0

47.0

47.0

NOTES

MBH 30 B

SEE

SUPPLEMENTAL

WCD

MBI 30 B

SHEET 10 OF 20

SAS

OPERATION PROFILE

RCC MANPSA

QTY % HRS

NOTES

NAME

ITEM CD PCN 51454A F

ALC WR

DATE

WCD MB030B

WCDDATE 88064

EQUIP
CODESKILL
CD/LVL

QTY % HRS

MAND
F HRSOPER
TYPEHIST
OCCROPER
DESC

RCC

MANPSA

PROC

1.00

T

O.

310

MANPSA

PROC

1.00

T

O.

MAND

F HRS

O.

SKILL

CD/LVL

O.

QTY

%

HRS

O.

EQUIP

CODE

O.

QTY

%

HRS

O.

NOTES

O.

310

MANPSA

PROC

1.00

S

O.

MAND

F HRS

O.

SKILL

CD/LVL

O.

QTY

%

HRS

O.

EQUIP

CODE

O.

QTY

%

HRS

O.

NOTES

O.

310

MANPSA

PROC

1.00

P

O.

MAND

F HRS

O.

SKILL

CD/LVL

O.

QTY

%

HRS

O.

EQUIP

CODE

O.

QTY

%

HRS

O.

NOTES

O.

310

MANPSA

PROC

1.00

P

O.

MAND

F HRS

O.

SKILL

CD/LVL

O.

QTY

%

HRS

O.

EQUIP

CODE

O.

QTY

%

HRS

O.

NOTES

O.

320

MANPSA

INS

1.00

T

O.

MAND

F HRS

O.

SKILL

CD/LVL

O.

QTY

%

HRS

O.

EQUIP

CODE

O.

QTY

%

HRS

O.

NOTES

O.

320

MANPSA

INS

1.00

S

O.

MAND

F HRS

O.

SKILL

CD/LVL

O.

QTY

%

HRS

O.

EQUIP

CODE

O.

QTY

%

HRS

O.

NOTES

O.

320

MANPSA

INS

1.00

P

O.

MAND

F HRS

O.

SKILL

CD/LVL

O.

QTY

%

HRS

O.

EQUIP

CODE

O.

QTY

%

HRS

O.

NOTES

O.

320

MANPSA

REP

1.00

P

O.

MAND

F HRS

O.

SKILL

CD/LVL

O.

QTY

%

HRS

O.

EQUIP

CODE

O.

QTY

%

HRS

O.

NOTES

O.

330

MANPSA

PROC

1.00

T

O.

MAND

F HRS

O.

SKILL

CD/LVL

O.

QTY

%

HRS

O.

EQUIP

CODE

O.

QTY

%

HRS

O.

NOTES

O.

330

MANPSA

PROC

1.00

S

O.

MAND

F HRS

O.

SKILL

CD/LVL

O.

QTY

%

HRS

O.

EQUIP

CODE

O.

QTY

%

HRS

O.

NOTES

O.

330

MANPSA

PROC

0.33

P

O.

MAND

F HRS

O.

SKILL

CD/LVL

O.

QTY

%

HRS

O.

EQUIP

CODE

O.

QTY

%

HRS

O.

NOTES

O.

335

MANPSA

PROC

1.00

T

O.

MAND

F HRS

O.

SKILL

CD/LVL

O.

QTY

%

HRS

O.

EQUIP

CODE

O.

QTY

%

HRS

O.

NOTES

O.

SEE
SUPPLEMENTAL

WCD

MBJ30B

SEE
SUPPLEMENTAL
USE
FOR
REPAIR
NEW
ARE
USED

WCD

MBD30B

4.0

1.0

OPERATION PROFILE SAS

NAME	ITEM CD	PCN	51454A	ALC	WR	WCD	M8030B	WCDDATE	88064	DATE	QTY	%	HRS	EQUIP	CODE	QTY	%	HRS	NOTES
OPER	RCC	MANPSA	INS	OPER	HIST	MAND	OPER	MAND	SKILL	CD/LVL	QTY	%	HRS	CODE					
390	MANPSA	INS	.	.	P	0	47891	2	.	1.0	.	.	.	.	.	.	.	.	.
390	MANPSA	INS	.	1.0	P	0	49533	2	.	1.0	.	.	.	.	.	.	.	.	.
400	MANPSA	ASSY	1.00	.	T	0	.	.	.	.	.	.	.	.	.	.	.	.	.
400	MANPSA	ASSY	.	.	S	0	.	.	.	.	.	.	.	.	.	.	.	.	.
400	MANPSA	ASSY	.	.	P	0	47891	2	.	3.0	4325	1	.	3.0	.	.	.	.	.
400	MANPSA	ASSY	.	1.0	P	0	49533	2	.	3.0	.	.	.	.	.	.	.	.	.
410	MANPSA	INS	1.00	.	T	0	.	.	.	.	.	.	.	.	.	.	.	.	.
410	MANPSA	INS	.	.	S	0	.	.	.	.	.	.	.	.	.	.	.	.	.
410	MANPSA	INS	.	.	P	0	47891	2	.	1.0	4325	1	.	0.5	.	.	.	.	.
410	MANPSA	INS	.	1.0	P	0	49533	2	.	1.0	.	.	.	.	.	.	.	.	.
420	MANPSA	INS	1.00	.	T	0	.	.	.	.	.	.	.	.	.	.	.	.	.
420	MANPSA	INS	.	.	S	0	.	.	.	.	.	.	.	.	.	.	.	.	.
420	MANPSA	INS	.	.	P	0	47891	2	.	1.0	4325	1	.	3.0	.	.	.	.	.

OPERATION PROFILE SAS

NAME	ITEM CD	PCN	51454A	ALC	WR	WCD	NB030B	WCDDATE	88064	DATE	QTY	%	HRS	EQUIP	CODE	QTY	%	HRS	NOTES
OPER	RCC	DESC	OPER	HIST	MAND	MAND	SKILL	CD/LVL	QTY	%	HRS								
NUMB				OCGR	TYPE	F	HRS												
420	MANPSA	INS		1.0	P	0.	49533	2		1.0									
430	MANPSA	ASSY	0.96		T	0.													
430	MANPSA	ASSY	1.00		S	0.													
430	MANPSA	ASSY			P	0.	47891	1		2.0	4325	1		3.5					
430	MANPSA	ASSY		1.0	P	0.	49533	1		2.0									
440	MANPSA	PROC	1.00		T	0.													
440	MANPSA	PROC			S	0.													
440	MANPSA	PROC			P	0.	47891	1		1.5	4325	1		1.5					
440	MANPSA	PROC		1.0	P	0.	49533	1		1.5									
450	MANPSA	PROC	0.96		T	0.													
450	MANPSA	PROC	1.00		S	0.													
450	MANPSA	PROC		1.0	P	0.	47891	1		2.0	4325	1		0.2					

OPERATION PROFILE															SAS	
NAME		ALC WR		DATE		RCC MANPSA										
ITEM CD PCN 51454A		WCD MB030B		WCD DATE 88064												
OPER	RCC	MANPSA	PROC	OPER	HIST	MAND	SKILL	QTY	%	HRS	EQUIP	CODE	QTY	%	HRS	
NUMB				TYPE	OCRR	F	CD/LVL									
450		MANPSA	PROC	P		0	49533	1		2.0						
460		MANPSA	ASSY	T		0										
460		MANPSA	ASSY	S		0										
460		MANPSA	ASSY	P		0	47891	1		2.0						
460		MANPSA	ASSY	P		0	49533	1		2.0						
470		MANPSA	PROC	T		0										
470		MANPSA	PROC	S		0										
470		MANPSA	PROC	P		0	47891	1		4.0						
480		MANPSA	ASSY	T		0										
480		MANPSA	ASSY	S		0										
480		MANPSA	ASSY	P		0	47891	1		2.0						
480		MANPSA	ASSY	P		0	49533	1		2.0						
490		MANPPC	INST	T		0	47891	1		10.0						

OPERATION PROFILE

NAME _____

ITEM CD PCN 51454A :

ALC WR

DATE _____

WCD MB030B WCDDATE 88064

**OPER
NUMBER**

OPER	DESC
------	------

HIST	MAND	OPER
OCCE	OCCE	TYPE
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10
11	11	11
12	12	12
13	13	13
14	14	14
15	15	15
16	16	16
17	17	17
18	18	18
19	19	19
20	20	20
21	21	21
22	22	22
23	23	23
24	24	24
25	25	25
26	26	26
27	27	27
28	28	28
29	29	29
30	30	30
31	31	31
32	32	32
33	33	33
34	34	34
35	35	35
36	36	36
37	37	37
38	38	38
39	39	39
40	40	40
41	41	41
42	42	42
43	43	43
44	44	44
45	45	45
46	46	46
47	47	47
48	48	48
49	49	49
50	50	50
51	51	51
52	52	52
53	53	53
54	54	54
55	55	55
56	56	56
57	57	57
58	58	58
59	59	59
60	60	60
61	61	61
62	62	62
63	63	63
64	64	64
65	65	65
66	66	66
67	67	67
68	68	68
69	69	69
70	70	70
71	71	71
72	72	72
73	73	73
74	74	74
75	75	75
76	76	76
77	77	77
78	78	78
79	79	79
80	80	80
81	81	81
82	82	82
83	83	83
84	84	84
85	85	85
86	86	86
87	87	87
88	88	88
89	89	89
90	90	90
91	91	91
92	92	92
93	93	93
94	94	94
95	95	95
96	96	96
97	97	97
98	98	98
99	99	99
100	100	100

MAND

SKILLS

3

EQUIP

490 MANPPC 12/5T . S D.

490 MANPPC INST . P 200

500 MANPSA INS 1.00 . T 0.

500 MANPSA INS . . S D.

500 MANPSA INS . P O. 47891 1 10

500	MANPSA	INS		
500	MANPSA	INS	1.0 P	49533
				0
				1
				10

510 MANPSA ASSY 0.95 : T 0.

00.

510	MANPSA ASSY	.	P	O.	47891
-----	-------------	---	---	----	-------

510	MANPSA	ASSY	1.0P	0.	49533	1	10

520	MANPSA	INS	1.00	.	T	0.
-----	--------	-----	------	---	---	----

520 MANPSA INS . . . S O .

NAME		OPERATION PROFILE										SAS	
ITEM CD PCN 31454A		ALC WR		DATE		WCD MB030B		WCD DATE 88064		RCC MANPSA			
OPER NUMB	RCC	OPER DESC	HIST OCCR	MAND OCCR	OPER TYPE	MAND F	SKILL CD/LVL	QTY	% HRS	EQUIP CODE	QTY	% HRS	
520		MANPSA INS		1.0	P	0	47891	1		1.0			
530		MANPSA REP	0.84		T	0							
530		MANPSA REP	84		S	0							
530		MANPSA REP			P	0	47891	1		2.3			
530		MANPSA REP			P	0	49533	1		2.3			
540		MANPSA INS	1.00		T	0							
540		MANPSA INS			S	0							
540		MANPSA INS			P	0	47891	1		1.0			
540		MANPSA INS		1.0	P	0	49533	1		1.0			
550		MANPSA ASSY	1.00		T	0							
550		MANPSA ASSY			S	0							
550		MANPSA ASSY			P	0	47891	1		2.0			
550		MANPSA ASSY		1.0	P	0	49533	1		2.0			

OPERATION PROFILE

NAME

NAME _____
ITEM CD PCN 51454A !

A1C WR

DATE _____

WCD M8030B WCDDATE 88064

[illegible]

NOTES

RCC MANPSA

QTY	%	HRS
1	100	1

560 MANPSA PROC 1.00

580	MANPSA	PROC	S	O
			1.0	

560	MANPSA	PROC	.	P	0.	47891	1	.	1.3
-----	--------	------	---	---	----	-------	---	---	-----

```
570 MANPSA PROC 1.00 . ' T 0. 0.
```

	MANPSA	PROC	. . . . .	O.
570	MANPSA	PROC	. . . . .	S

570	MANPSA	PROC	.	P	.	1	.	1.3
						0.		
						0.	47891	

570	MANPSA	PROC	P	0	4953	1	1.3
-----	--------	------	---	---	------	---	-----

580	MANPSA	INS	1.00	T	O.
-----	--------	-----	------	---	----

580 MANPSA INS . 1.0 S Q

580	MANPSA	INS	P	O	1	0.3

580	MANPSA	INS	P	Q	49533	1	0.3

```
590 MANPSA PROC 1.00 : T 0.
```

0.

OPERATION PROFILE SAS

SHEET 19 OF 20

NAME	ITEM CD	PCN	51454A	ALC	WR	WCD	MB030B	WCDDATE	88064	DATE	RCC	MANPSA	QTY	%	HRS	NOTES
OPER NUB	RCC	MANPSA	PROC	OPER	HIST	MAND	OCGR	TYPE	MAND	SKILL	CD/LVL	QTY	%	HRS	EQUIP CODE	
590	MANPSA	PROC		S					0							
590	MANPSA	PROC		P					0	47891	1			1.3		
590	MANPSA	PROC		P					0	49533	1			1.3		
600	MANPDC	PAT	1.00	T					3.0	49533	3			2.0		
600	MANPDC	PAT	1.0	S					0							
600	MANPDC	PAT		P					800							
610	MANPSA	ASSY	0.88	T					3.0	49533	3			2.0		
610	MANPSA	ASSY	1.00	S					0							
610	MANPSA	ASSY		P					0	47891	1			8.0		
620	MANPSA	ASSY	0.88	T					0							
620	MANPSA	ASSY	1.00	S					0							
620	MANPSA	ASSY		P					0	47891	1			1.0		
630	MANPSA	INS	0.88	T					0							

BLDG 180

.89

SAS

OPERATION PROFILE

NAME	ITEM CD	PCN	51454A	11	WCD	MB030B	WCDDATE	88064	ALC	WR	DATE	QTY	%	HRS	EQUIP	CODE	QTY	%	HRS	NOTES
OPER	NUMB	RCC	DESC	HIST	MAND	OPER	MAND	SKILL	F	HRS	CD/LVL	QTY	%	HRS						
630	MANPSA	INS			S															
630	MANPSA	INS			P			47891				1		0.3						
630	MANPSA	INS			P			49533				1		0.3						
640	MANPSA	INS	0.84		T															
640	MANPSA	INS			S															
640	MANPSA	INS			P			47891				1		0.3						

(SEE PAGE 1 OF 1)

OPERATION PROFILE SAS

NAME

ITEM CD PCN 51454A

ALC WR

DATE

WCD MBC30B WCD DATE 88064

OPER NMB RCC OPER HIST MAND OPER MAND SKILL
DESC OCCR TYPE F HRS CD/LVL QTY % HRS EQUIP
CODE

NOTES

RCC MANPSA

QTY % HRS

EQUIP
CODE

% HRS

QTY

CD/LVL

F HRS

OCCR TYPE

HIST MAND

OPER DESC

RCC

OPER NMB

1.0 S

10 MANPCC

0.

10 MANPCC

0.

20 MANPCC

0.

20 MANPCC

0.

20 MANPCC

0.

30 MANPCC

0.

30 MANPCC

0.

30 MANPCC

BLDG 158

OPERATION PROFILE

NAME

ITEM CD PCN 51454A

OPER NOMB

RCC

MANPSA

INS

1.00

T

0.

0.

0.

0.

0.

0.

0.

0.

0.

0.

0.

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0.

0.

0.

0.

0.

ALC WR

WCD MBH308

WCD

MAND

OPER

TYPE

F

HRS

CD/LVL

SKILL

CD/LVL

QTY

%

HRS

1.0

P

0.

0.

0.

0.

0.

0.

0.

0.

0.

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DATE

WCDDATE 88064

QTY

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RCC MANPSA

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NOTES

(NEW SKIN ASSY)

BLDG 169

SHEET OF

SAS

OPERATION PROFILE

DATE _____

ALC WR

WCDDATE 88064

f. WCD MBH30B

NAME _____
ITEM CD PCN 51454A

ITEM CD PCN 51454A

OPER NUMB	RCC	OPER DESC	HIST OCCR	MAND OCCR	OPER TYPE	MAND F	HRS	SKILL CD/LVL	QTY	%	HRS	EQUIP CODE	QTY	%	HRS	NOTES
--------------	-----	--------------	--------------	--------------	--------------	-----------	-----	-----------------	-----	---	-----	---------------	-----	---	-----	-------

RCC MANPSA	QTY	% HRS
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10
11	11	11
12	12	12
13	13	13
14	14	14
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16	16	16
17	17	17
18	18	18
19	19	19
20	20	20
21	21	21
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31	31	31
32	32	32
33	33	33
34	34	34
35	35	35
36	36	36
37	37	37
38	38	38
39	39	39
40	40	40
41	41	41
42	42	42
43	43	43
44	44	44
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67	67	67
68	68	68
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93	93	93
94	94	94
95	95	95
96	96	96
97	97	97
98	98	98
99	99	99
100	100	100

35 WAPSA PROC . . . S O.

35	MANPSA	PROC	ρ	ρ	ρ
			0.47891	1	0.1

35	MANPSA	PROC	P	Q	49533	1	0.1

[illegible]

40	MANPSA	INS	10	S	0

	MANPSA	INS	P	Q	I	.0.1
40						.

40	MANPSA	INS	.	P	0	4533	1	.	0.1	.
----	--------	-----	---	---	---	------	---	---	-----	---

50	MANPSA	PROC	1.00	.	Y	0.
----	--------	------	------	---	---	----

50 MANPSA PROC . / . P S U

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50 MANPSA PROC          .      P      C      47891      Z      .      9.0

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SU      MANPSA  PROC      :      .      .      .      .      .      .
                                42333      2      .      .      .      .
                                9.0

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OPERATION PROFILE										SAS	
NAME										SHEET	
ITEM CD PCN '51454A'										OF	
OPER										NOTES	
NUMB											
55	MANPSA	PROC	1.0	S	0	47891	2	5.0	5.0	QTY	% HRS
55	MANPSA	PROC	.	P	0	47891	2	5.0	5.0	.	.
55	MANPSA	PROC	.	P	0	49533	2	5.0	5.0	.	.
60	MANPSA	PROC	0.83	T	0					.	.
60	MANPSA	PROC	.83	S	0					.	.
60	MANPSA	PROC	.	P	0	47891	1	2.0	2.0	.	.
60	MANPSA	PROC	.	P	0	49533	1	2.0	2.0	.	.
70	MANPSA	PROC	1.00	T	0					.	.
70	MANPSA	PROC	1.0	S	0					.	.
70	MANPSA	PROC	.	P	0	47891	1	0.8	0.8	.	.
70	MANPSA	PROC	.	P	0	49533	1	0.8	0.8	.	.

SHEET _____ OF _____

BLOG 142

NAME		OPERATION PROFILE										SAS	
ITEM CD PCN 51454A7		ALC WR		DATE		WCD MBA30B		WCD DATE 88064		RCC MANPSA			
OPER NUMB	RCC	OPER DESC	HIST	MAND	OPER	MAND	SKILL	CD/LVL	QTY	%	HRS	EQUIP CODE	
10	MANPDA	115P	.	T	1.0	119533	1	0.5					
10	MANPDA	DEP	.	1.0	S	0							
10	MANPDA	DEP	.	P	10.0								
20	MANPDA	INSP	.	T	0								
20	MANPDA	115P	.	1.0	S	0							
20	MANPDA	115P	.	P	11.0								
30	MANPSA	REP	.	T	1.0	119533	1	0.5					
30	MANPSA	REP	.	1.0	S	0							
30	MANPSA	REP	.	P	0	47891	1	0.8					
30	MANPSA	REP	.	P	0	49533	1	0.8					
40	MANPSA	PROC	.	T	0								
40	MANPSA	PROC	.	1.0	S	0							
40	MANPSA	PROC	.	P	0	47891	1	0.8					

OPERATION PROFILE SAS

SHEET 1 OF 1

NAME	CD	PCN	51454A	ALC	WR	DATE	WCD	DATE	88064	QTY	%	HRS	EQUIP	CODE	QTY	%	HRS	NOTES
OPER	NUMB	RCC	MAN	DESC	OPER	HIST	MAND	CD	TYPE	F	HRS	CD/LVL	SKILL					
40	MANPSA	PROC			P			49533		1		0.8						

[illegible]

OPERATION PROFILE										SAS	
NAME		ITEM CD PCN 51454A		ALC WR		DATE		WCD MBI30B		WCD DATE 88064	
OPER NUMB	RCC	OPER DESC	HIST MAND OCCR TYPE	MAND F HRS	SKILL CD/LVL	QTY	%	HRS	EQUIP CODE	QTY	% HRS
40	MANPSA	10-1	P	0							
50	MANPSA	REP	1.00	T	0						
50	MANPSA	REP	1.0	S	0						
50	MANPSA	REP		P	0	47891	2	5.7			
50	MANPSA	REP		P	0	49533	2	5.7			
60	MANPSA	REP	1.00	T	0						
60	MANPSA	REP	1.0	S	0						
60	MANPSA	REP		P	0	47891	2	2.5			
60	MANPSA	REP		P	0	49533	2	2.5			
70	MANPSA	INS	1.00	T	0						
70	MANPSA	INS	1.0	S	0						
70	MANPSA	INS		P	0	47891	2	2.5			

NOTES

NAME										OPERATION PROFILE				SAS		9:46 TUESDAY							
ITEM CD PCN 51454A										ALC WR		DATE		SHEET									
OPER NUMB										HIST MAND		WCD DATE 88064											
RCC										OPER DESC		WCD		MBJ30B		RCC MANPSA							
MANPSA										PROC		HIST OCCR TYPE		MAND F HRS		EQUIP CODE							
40										MANPSA		PROC		S		0.		QTY % HRS					
40										MANPSA		PROC		0.85		P		47891 2 4.0		QTY % HRS			
40										MANPSA		PROC		.		P		49533 2 4.0		QTY % HRS			
50										MANPSA		PROC		1.00		T		0.		QTY % HRS			
50										MANPSA		PROC		.		1.0		S		0.		QTY % HRS	
50										MANPSA		PROC		.		P		47891 1 2.0		QTY % HRS			
50										MANPSA		PROC		.		P		49533 1 2.0		QTY % HRS			
60										MANPSA		PROC		1.00		T		0.		QTY % HRS			
60										MANPSA		PROC		.		1.0		S		0.		QTY % HRS	
60										MANPSA		PROC		.		P		47891 1 4.0		QTY % HRS			
60										MANPSA		PROC		.		P		49533 1 4.0		QTY % HRS			
70										MANPSA		PROC		1.00		T		0.		QTY % HRS			

OPERATION PROFILE SAS

SHEET ___ OF ___

NAME	_____		ALC WR		DATE		_____		RCC MANPSA						
ITEM CD	PCN	51454A	WCD	MBD30B	WCDDATE	88064									
OPER	RCC	OPER	HIST	MAND	OCRR	TYPE	F	HRS	CD/LVL	SKILL	EQUIP	CODE	QTY	%	HRS
50	MANPSA	PROC	.	.	S	.	0	.	.	.	.	.	.	.	.
50	MANPSA	PROC	.	.	P	.	0	.	47891	1	.	4.8	.	.	.

0
1.0
0
47891
4.8

OPERATION PROFILE SAS

SHEET ___ OF ___

NAME	ITEM CD	PCN	51454A	ALC	WR	WCD	MBF30B	WCDDATE	88064	DATE	RCC	MANPSA	QTY	%	HRS	NOTES
OPER	NUMB	RCC	DESC	OPER	HIST	MAND	OPER	MAND	SKILL	CD/LVL	QTY	%	HRS	EQUIP	CODE	
50	MANPDA															
50	MANPDA															

1.0 S
0. P

SHEET ____ OF ____

SAS

OPERATION PROFILE

RCC MANPSA

DATE

ALC WR

ITEM CD PCN 51454A

WCD MBG30B WCDDATE 88064

NOTES

QTY % HRS

EQUIP CODE

QTY % HRS

QTY

SKILL CD/LVL

F HRS

OPER TYPE

HIST

OPCR

DESC

OPER

NUMB

QTY % HRS

EQUIP CODE

QTY % HRS

QTY

SKILL CD/LVL

F HRS

OPER TYPE

HIST

OPCR

DESC

OPER

NUMB

10

MANPSB

QTY % HRS

EQUIP CODE

QTY % HRS

QTY

SKILL CD/LVL

F HRS

OPER TYPE

HIST

OPCR

DESC

OPER

NUMB

10

MANPSB

QTY % HRS

EQUIP CODE

QTY % HRS

QTY

SKILL CD/LVL

F HRS

OPER TYPE

HIST

OPCR

DESC

OPER

NUMB

10

MANPSB

✓

OPERATION PROFILE SAS

NAME	ITEM CD	PCN	51454A	ALC	WR	DATE	WCD	MBE30B	WCD	DATE	88064	RCC	MANPSA	QTY	%	HRS	NOTES
OPER	NUMB	RCC	DESC	OPER	HIST	MAND	OCRR	TYPE	MAND	SKILL	CD/LVL	QTY	%	HRS	EQUIP	CODE	
10	MANPSB							T	0.								
10	MANPSB				1.0	S			0.								
10	MANPSB							P	0.								
20	MANPSB							T	0.								
20	MANPSB				1.0	S			0.								
20	MANPSB							P	0.								
25	MANPSB							T	0.								
25	MANPSB				1.0	S			0.								
25	MANPSB							P	0.								
30	MANPSB							T	0.								
30	MANPSB				1.0	S			0.								
30	MANPSB							P	0.								

SAS

OPERATION PROFILE

SHEET ____ OF ____

NAME

ITEM CD PCN 51454A[†]

OPER NUMB RCC OPER HIST MAND OPER MAND F WCD MBOAIB WCD DATE 87364

DESC OCCR TYPE F HRS CD/LVL

SKILL QTY % HRS EQUIP CODE

NOTES

RCC MANPSA

QTY

%

HRS

30 MANPSA . . . S 0.

30 MANPSA . . . P 0.

40 MANPSA 1.00 . . . T 0.

40 MANPSA . . . S 0.

40 MANPSA . . . P 0.

50 MANPSA 1.00 . . . T 0.

50 MANPSA . . . S 0.

50 MANPSA . . . P 0.

SAS

OPERATION PROFILE

SHEET ___ OF ___

RCC MANPSA

ALC WR

NAME _____

ITEM CD PCN 51454A' WCD MBO30B1 WCD DATE 88064

OPER NUMB HIST MAND OPER MAND SKILL CD/LVL QTY % HRS EQUIP CODE

10 MANPSA INS . . . T 0.00 0 0 47891 1 0.1

10 MANPSA INS . . . S 0.00 0 0 47891 1 0.1

10 MANPSA INS . . . P 0.00 0 0 47891 1 0.1

QTY % HRS

QTY % HRS

QTY % HRS

QTY % HRS

QTY % HRS

QTY % HRS

NOT USED
WITHIN THE
PAST 2 YRS.

9:33 TUESDAY, MARCH 28, 1989 1

SAS
ASSEMBLY/DISASSEMBLY PROFILE

NAME	ITEM CODE	WCD	ALC	WTR	WCD	DT	DSOP	ASOP	REMOV	ITEM CODE	DATE	RCC	MANPSA	WCD	WCD	DT	INSTALL	SAME	NOTES
	PCN 05502A	MB017Y	88141	40	380	PCN 05502AD													
	PCN 05502A	MB017Y	88141	50	360	PCN 05502AA													
	PCN 05502A	MB017Y	88141	60	210	PCN 05502AC													
	PCN 51454A	MB030B	88064	110	120	PCN 51454AH1													
	PCN 51454A	MB030B	88064	20	290	PCN 51454AP7													
	PCN 51454A	MB030B	88064	260	370	PCN 51454AA													
	PCN 51454A	MB030B	88064	270	290	PCN 51454AG													
	PCN 51454A	MB030B	88064	270	480	PCN 51454AH2													
	PCN 51454A	MB030B	88064	270	290	PCN 51454AAB													
	PCN 51454A	MB030B	88064	280	340	PCN 51454AI													
	PCN 51454A	MB030B	88064	320	400	PCN 51454AJ													
	PCN 51454A	MB030B	88064	330	430	PCN 51454AD													
	PCN 51454A	MB030B	88064	40	500	PCN 51454AC													
	PCN 51454A	MB030B	88064	90	460	PCN 51454AE													

490

90 460

13:04 THURSDAY, FEBRUARY 23, 1989

APPENDIX B, REPORT 2
 (ASSEMBLY/DISASSEMBLY PROFILE LIST FOR ALC=WR RCC=MANPSA
 SORTED BY PARENT ITEM CODE)

ITEMCD	ITEMCT	ALC	RCC	PN	PCN	NSN	WCD	WCDDATE	DISOP	ASOP	REMITEM	REMCT	MISTRFG	ASSAME	STOCK	DKEY
05502A	PCN	WR	MANPSA	8130281-10	05502A	MB017Y	88141	40	380	05502AD		Y	N	0	0	DA01 1
05502A	PCN	WR	MANPSA	8130281-10	05502A	MB017Y	88141	50	360	05502AA		Y	N	0	0	DA01 2
05502A	PCN	WR	MANPSA	8130281-10	05502A	MB017Y	88141	60	210	05502AC		Y	N	0	0	DA01 3
X	51454A	PCN	WR	MANPSA	3F40455-105	51454A	MB030B	88064	20	280	51454AF		Y	N	0	DA01 4
✓	51454A	PCN	WR	MANPSA	3F40455-105	51454A	MB030B	88064	40	500	51454AC	ELEC.	Y	N	0	DA01 5
✓	51454A	PCN	WR	MANPSA	3F40455-105	51454A	MB030B	88064	90	460	51454AE	ALOE	Y	N	0	DA01 6
X	51454A	PCN	WR	MANPSA	3F40455-105	51454A	MB030B	88064	110	120	51454AH1	DUR	Y	N	0	DA01 7
✓	51454A	PCN	WR	MANPSA	3F40455-105	51454A	MB030B	88064	260	370	51454AA	FLCE	Y	N	0	DA01 8
X	51454A	PCN	WR	MANPSA	3F40455-105	51454A	MB030B	88064	270	280	51454AG		Y	N	0	DA01 9
X	51454A	PCN	WR	MANPSA	3F40455-105	51454A	MB030B	88064	270	460	51454AH2	FLCE	Y	N	0	DA01 10
✓	51454A	PCN	WR	MANPSA	3F40455-105	51454A	MB030B	88064	270	280	51454AB		Y	N	0	DA01 11
X	51454A	PCN	WR	MANPSA	3F40455-105	51454A	MB030B	88064	280	340	51454A1		Y	N	0	DA01 12
X	51454A	PCN	WR	MANPSA	3F40455-105	51454A	MB030B	88064	320	400	51454AJ		Y	N	0	DA01 13
✓	51454A	PCN	WR	MANPSA	3F40455-105	51454A	MB030B	88064	330	430	51454AD	FLCE	Y	N	0	DA01 14

13:04 THURSDAY, FEBRUARY 23, 1989

APPENDIX B, REPORT
 ASSEMBLY/DISASSEMBLY PROFILE LIST FOR ALC=WR RCC=MANPSA
 SORTED BY REMOVED ITEM CODE (REMITEM)

ITEMCD	ITEMCT	ALC	RCC	PN	PCN	NSN	WCD	WCDDATE	DISOP	ASOP	REMITEM	REMCT	MISTRFG	ASSAME	STOCK	DKEY
05502A	PCN	WR	MANPSA	8130281-10	05502A		MB017Y	88141	50	360	05502AA		Y	N	0	DA01 2
05502A	PCN	WR	MANPSA	8130281-10	05502A		MB017Y	88141	60	210	05502AC		Y	N	0	DA01 3
05502A	PCN	WR	MANPSA	8130281-10	05502A		MB017Y	88141	40	380	05502AD		Y	N	0	DA01 1
51454A	PCN	WR	MANPSA	3F40455-105	51454A		MB030B	88064	260	370	51454AA		Y	N	0	DA01 8
51454A	PCN	WR	MANPSA	3F40455-105	51454A		MB030B	88064	270	460	51454AAB		Y	N	0	DA01 11
51454A	PCN	WR	MANPSA	3F40455-105	51454A		MB030B	88064	40	600	51454AC		Y	N	0	DA01 5
51454A	PCN	WR	MANPSA	3F40455-105	51454A		MB030B	88064	330	430	51454AD		Y	N	0	DA01 14
51454A	PCN	WR	MANPSA	3F40455-105	51454A		MB030B	88064	90	460	51454AE		Y	N	0	DA01 6
51454A	PCN	WR	MANPSA	3F40455-105	51454A		MB030B	88064	20	290	51454AF		Y	N	0	DA01 4
51454A	PCN	WR	MANPSA	3F40455-105	51454A		MB030B	88064	270	290	51454AG		Y	N	0	DA01 9
51454A	PCN	WR	MANPSA	3F40455-105	51454A		MB030B	88064	110	120	51454AH1		Y	N	0	DA01 7
51454A	PCN	WR	MANPSA	3F40455-105	51454A		MB030B	88064	270	460	51454AH2		Y	N	0	DA01 10
51454A	PCN	WR	MANPSA	3F40455-105	51454A		MB030B	88064	280	340	51454AI		Y	N	0	DA01 12
51454A	PCN	WR	MANPSA	3F40455-105	51454A		MB030B	88064	320	400	51454AJ		Y	N	0	DA01 13

BILL RICH
4-15-81

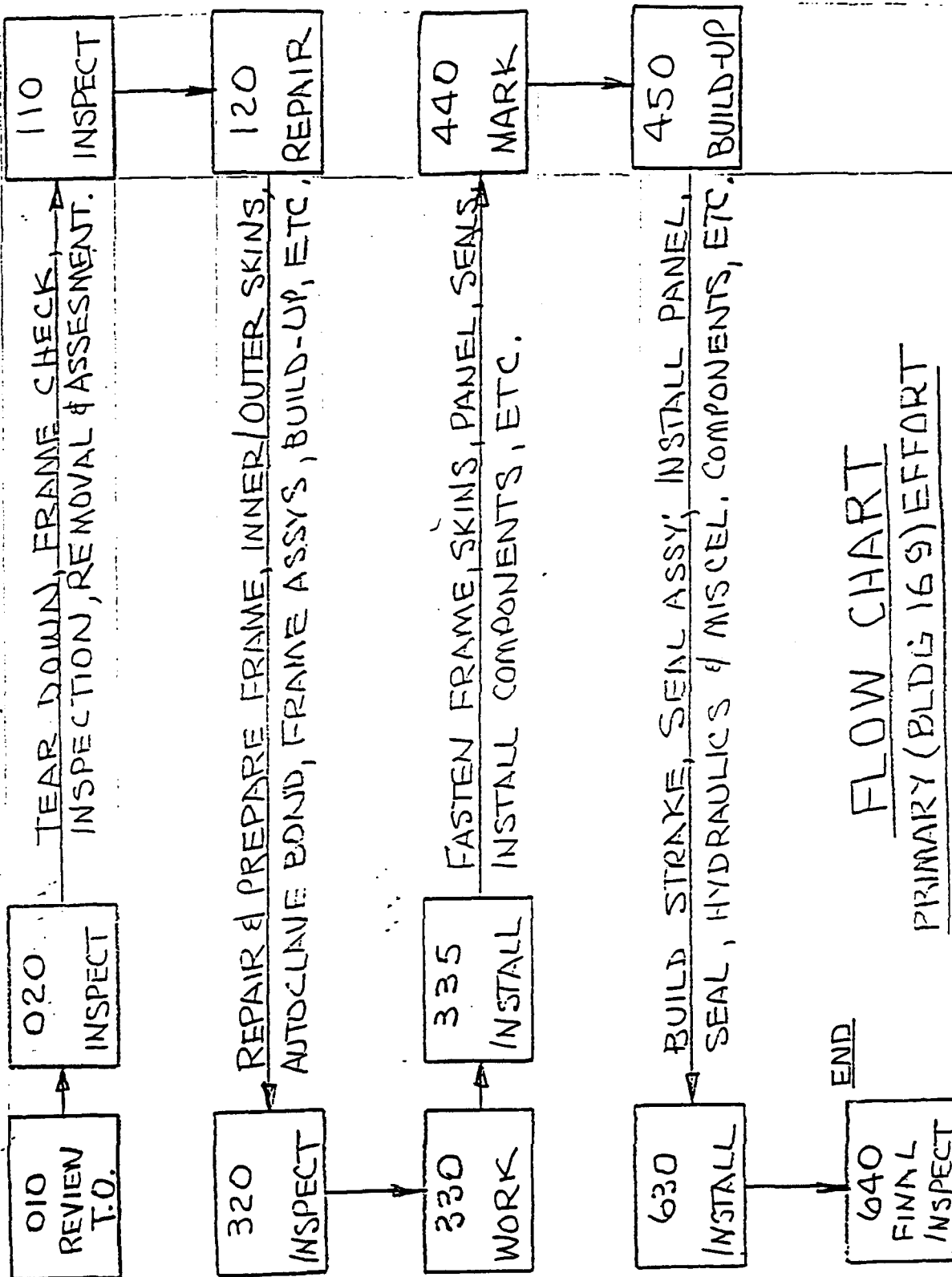
SHEET 2 OF 2

MNPSA

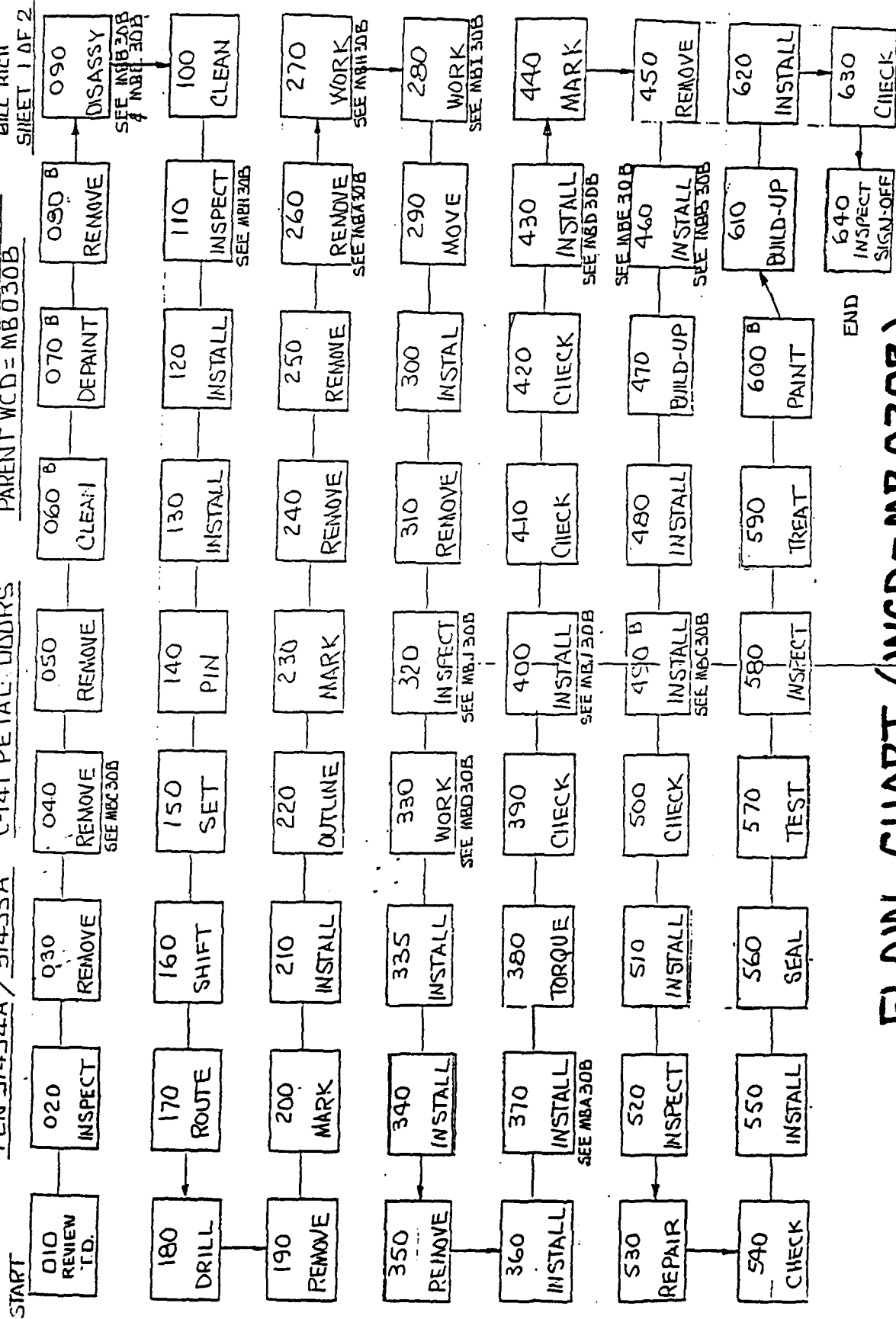
WCD = MBO30B (PARENT)

PCN 51454A/51455A

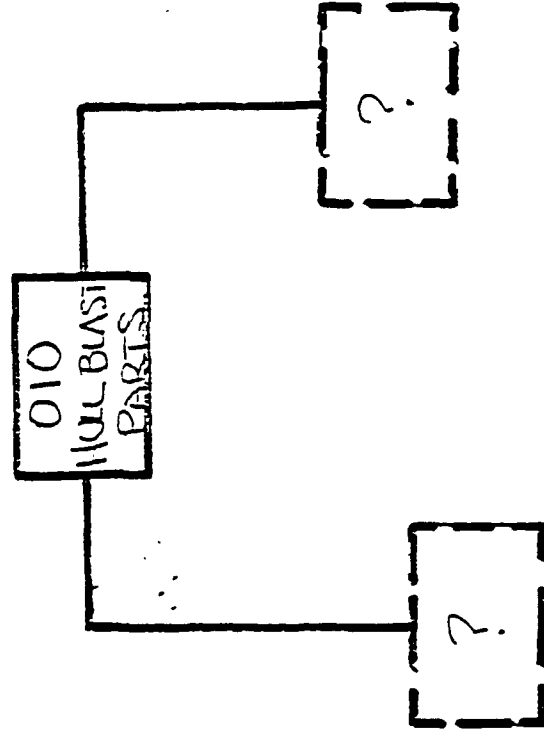
START



FLOW CHART
PRIMARY (BLDG 169) EFFORT
(OVERVIEW ONLY)



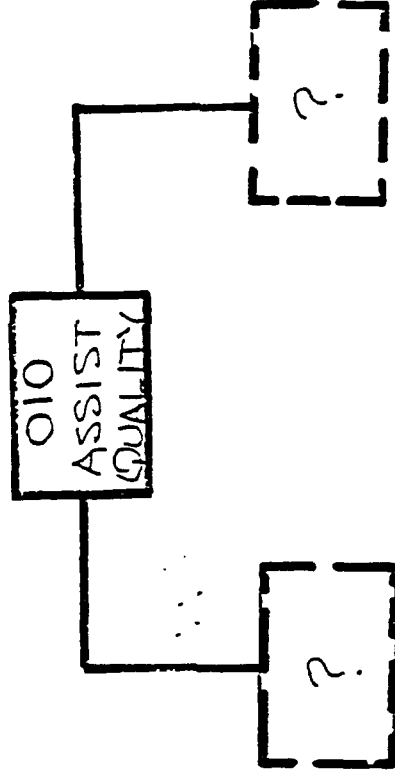
MBA 32 B
GENL. USAGE (HULL BLAST)



. NO LONGER USED - SEE OPER. 010 ON MBA30B.

MBQ30B

PETAL DOOR (QUALITY)

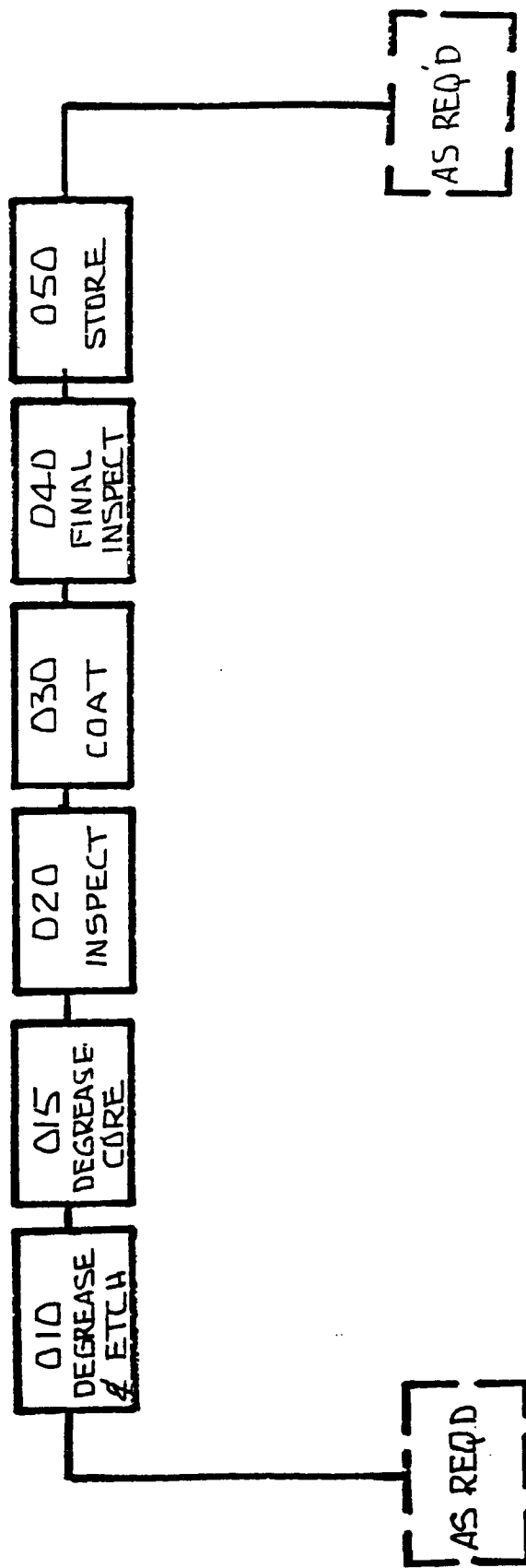


. THIS SUPPLEMENTAL WCD IS INTENDED FOR MECHANIC ASSISTANCE TO QUALITY FOR THE DISPOSITION OF MATERIAL DEFECENCY REPORTS. IT IS SELDOM USED. NO MDR'S HAVE BEEN ISSUED WITHIN THE LAST 12 MONTHS.

MBOAIB

DEGREASE/ETCH

(BLDG 169)

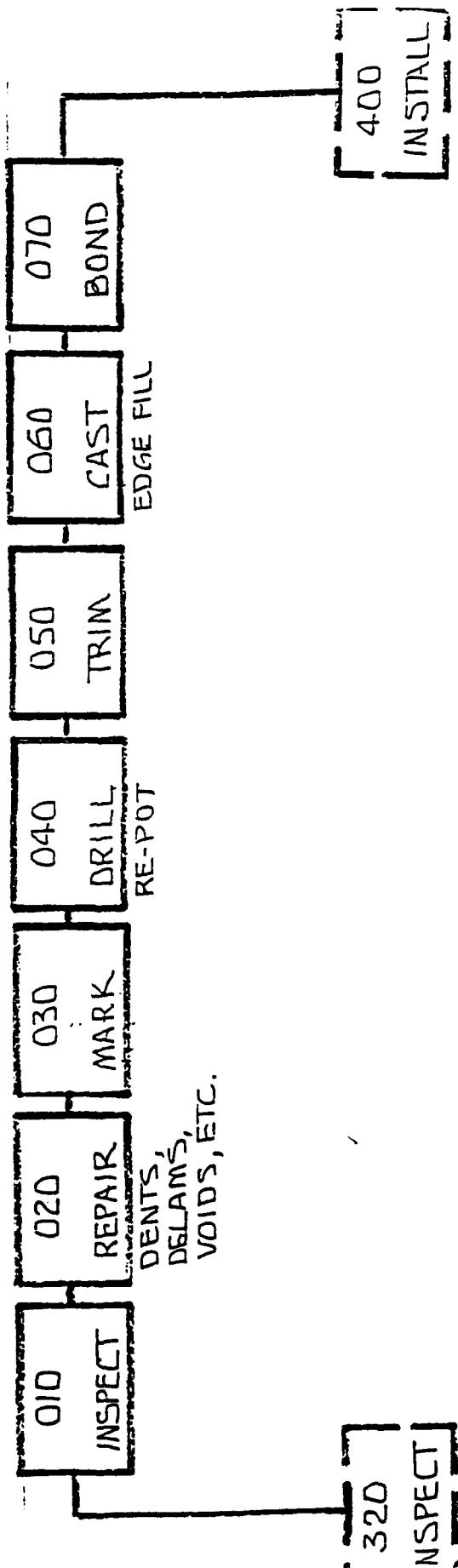


• TO BE USED FOR DETAIL PARTS THAT ARE TO BONDED.

MBJ 30 B

INNER SKIN ASSY

(NEW SKIN)
(BLDG 169)

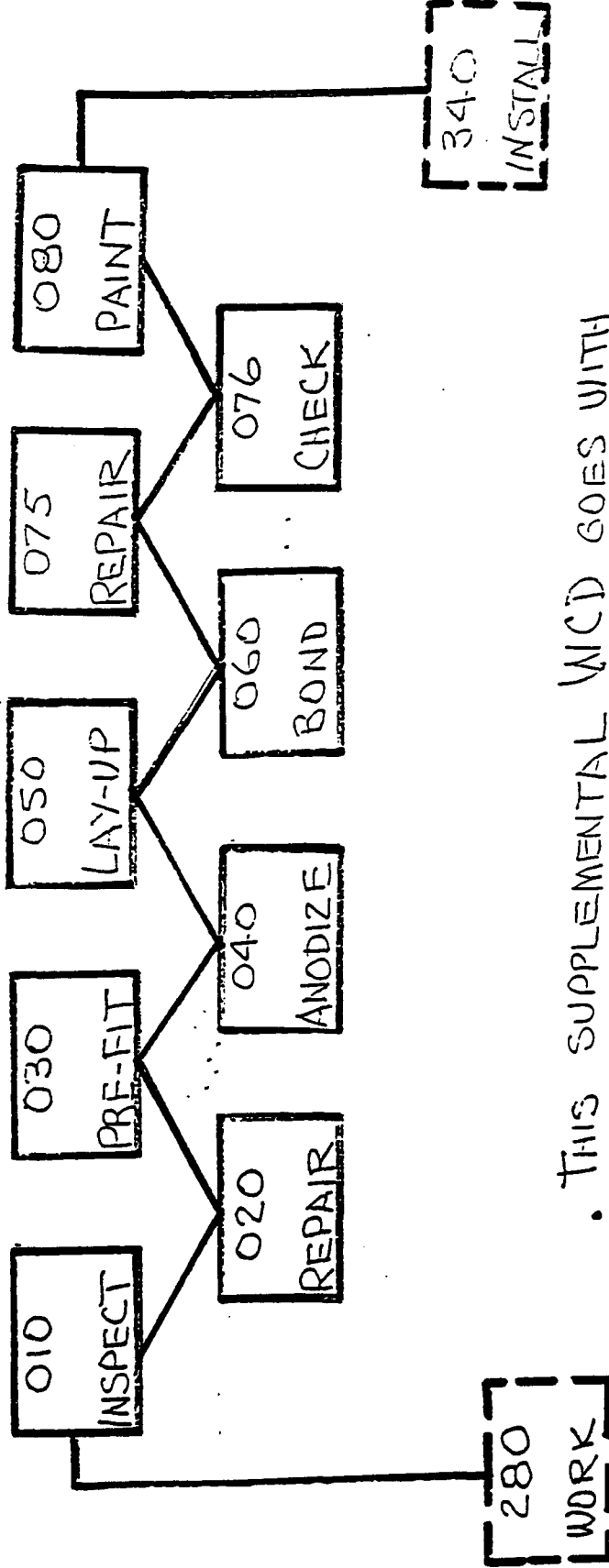


• CURE TIME CRITICAL.

MBI 30B

FRAME ASSYS

(BLDG 169)



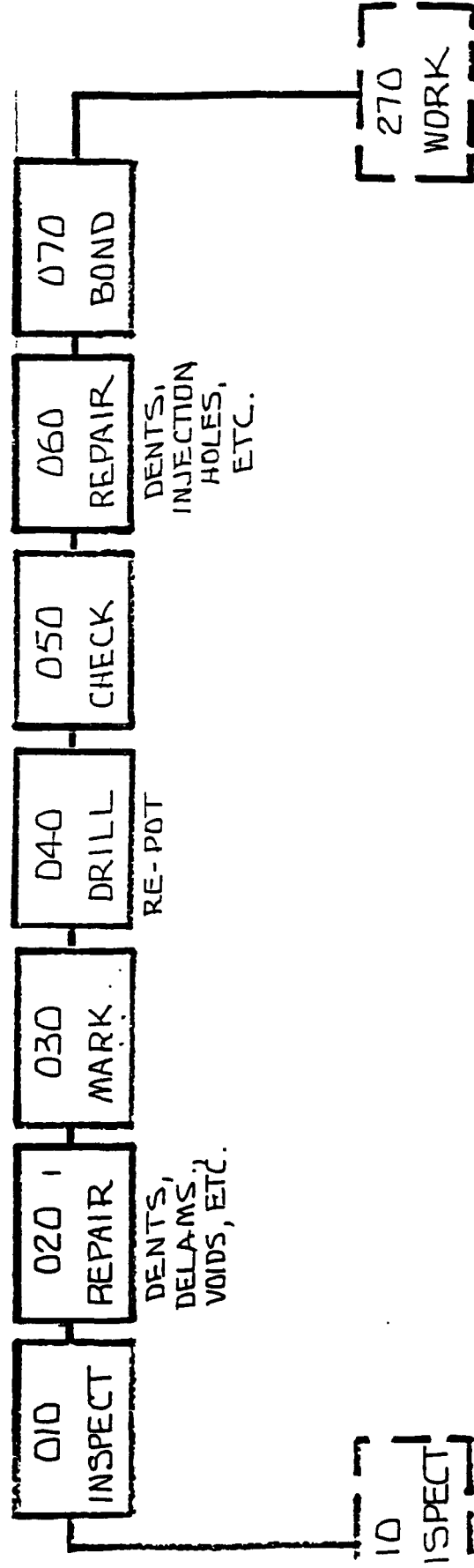
. THIS SUPPLEMENTAL WCD GOES WITH EACH H.C. FRAME ASSY TO BE REPAIRED, WHICH IS USUALLY 2-3 PER DOOR SIDE.

MBH 30 B

OUTER SKIN ASSY

(NEW SKIN)

(BLDG 169)

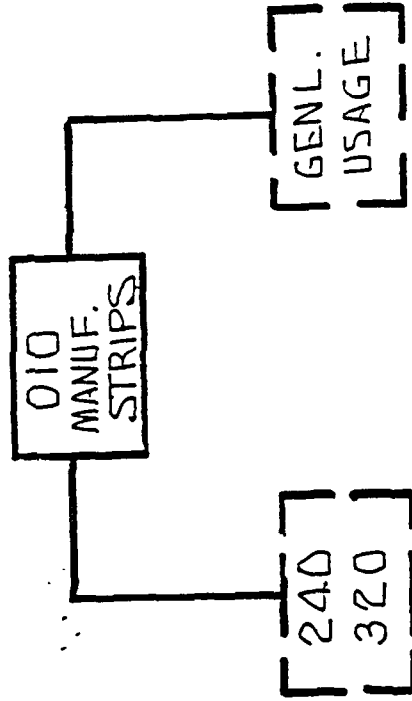


• CURE-TIME CRITICAL.

MBG 30B

STRIPS

(BLDG 169)

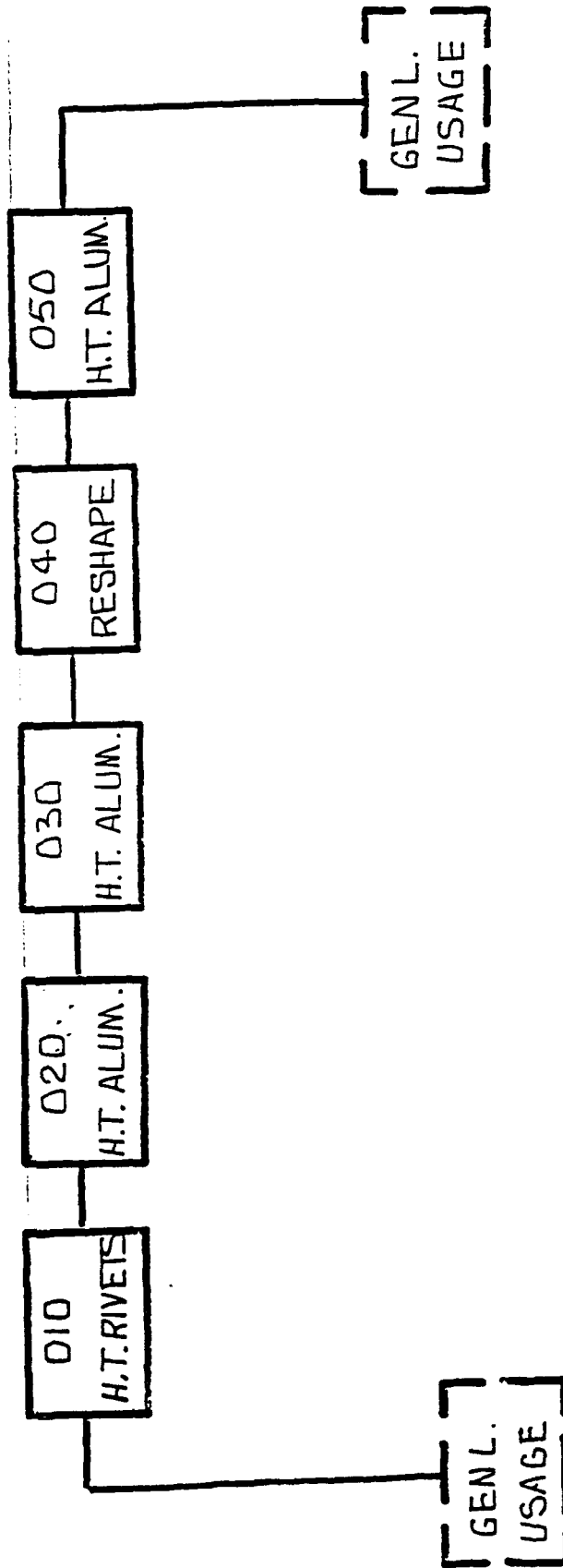


- A GENERAL USAGE WCD FOR BACKING STRIPS AT THE ATTACHMENT OF FRAME TO SKINS.

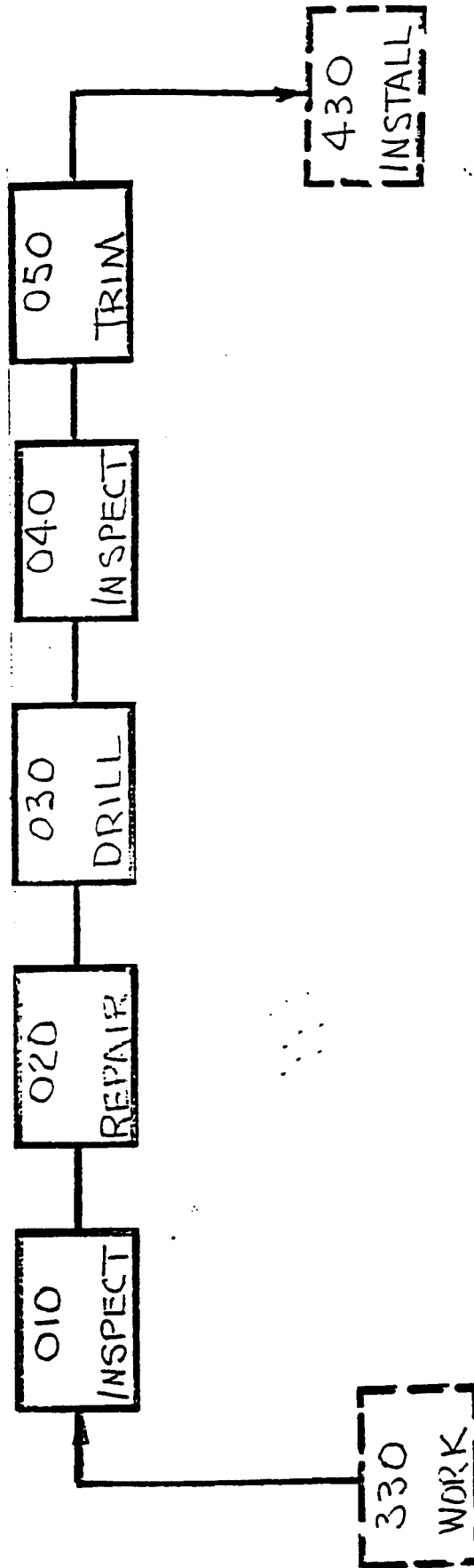
MBF 30 B

MISCEL. PARTS

(BLDG 140)



MBD 30B
H.C. PANEL
(BLDG 169)

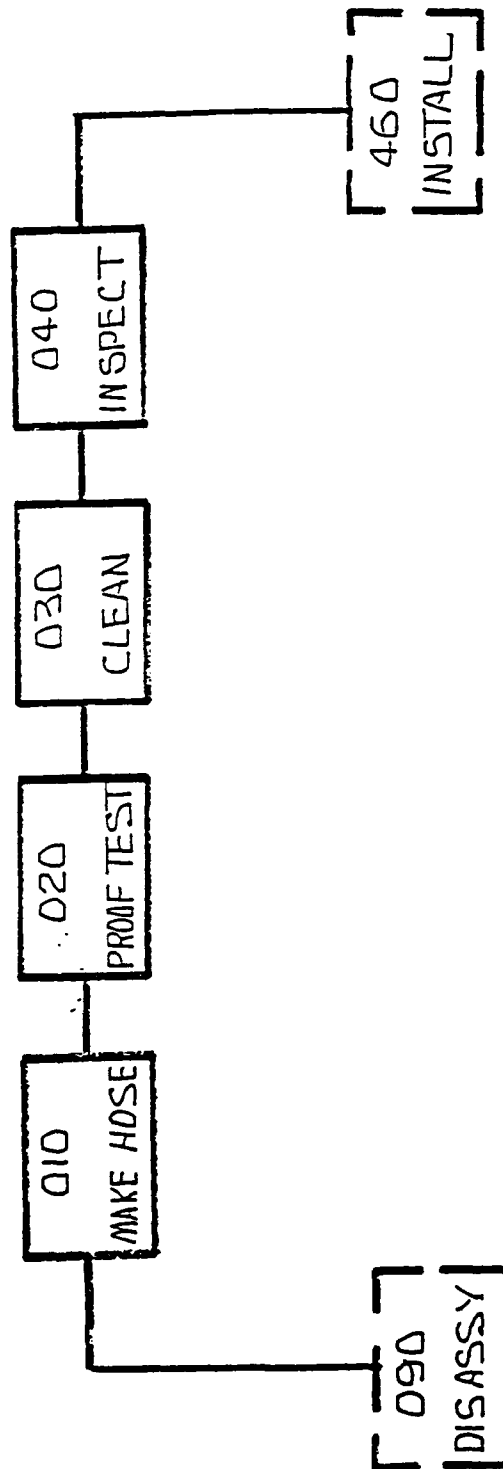


* THIS SUPPLEMENTAL WCD IS FOR THE REWORK OF THE "OLD" H.C. PANEL. IT IS SELDOM USED. "NEW" H.C. PANELS ARE USED IN LIEU OF.

MBE 30B

HOSE ASSEMBLIES

(TUBING AREA BLDG 169)



MBC 30B

ELECTRICAL
(BLDG 158)

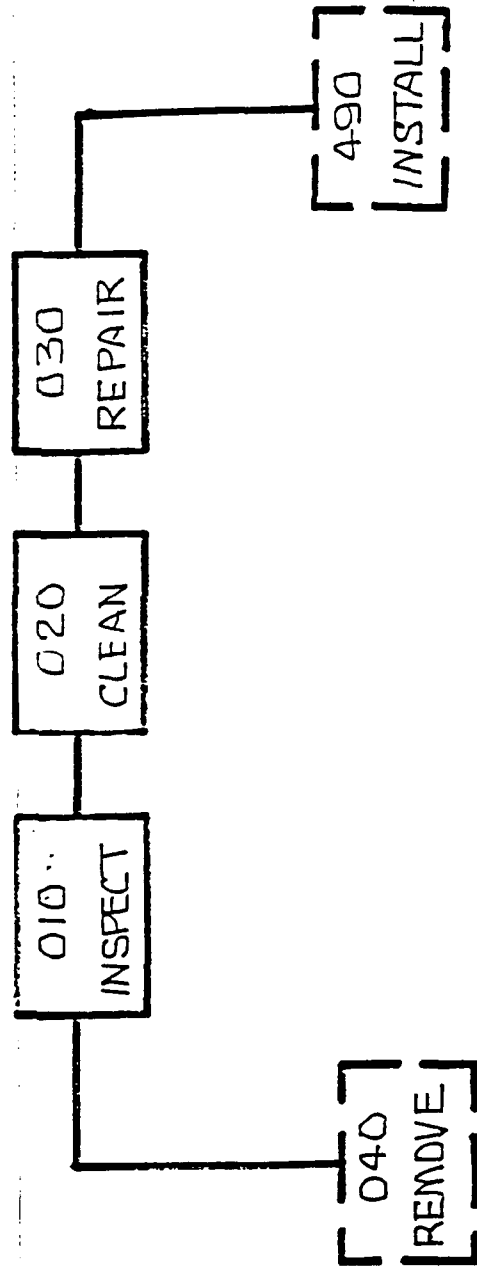
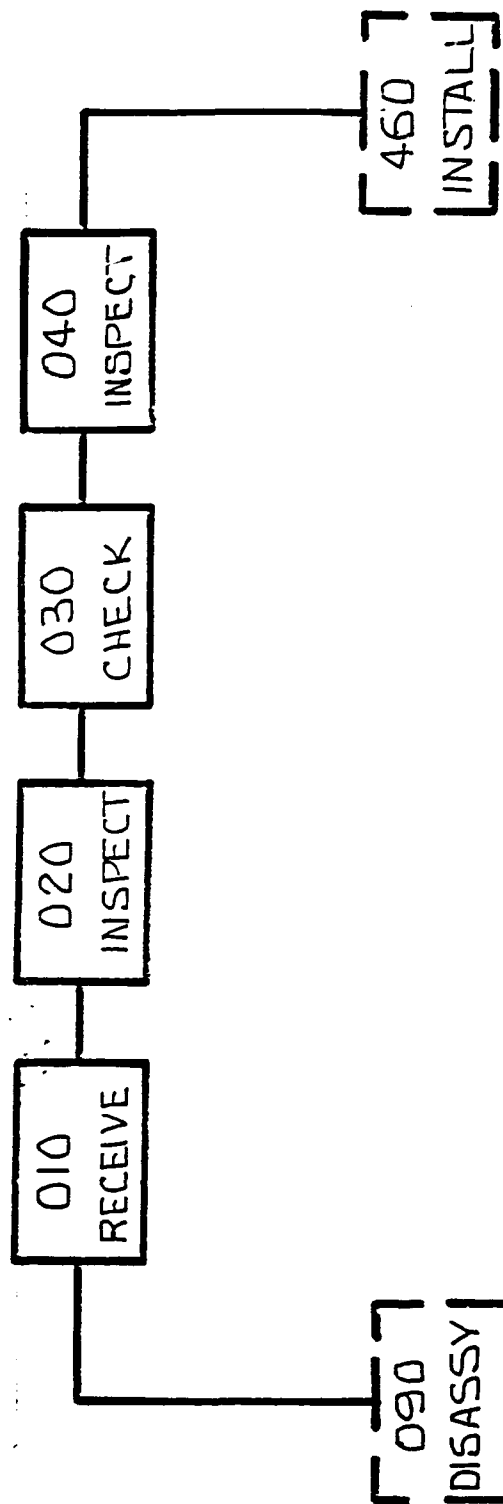


ABB 30 B

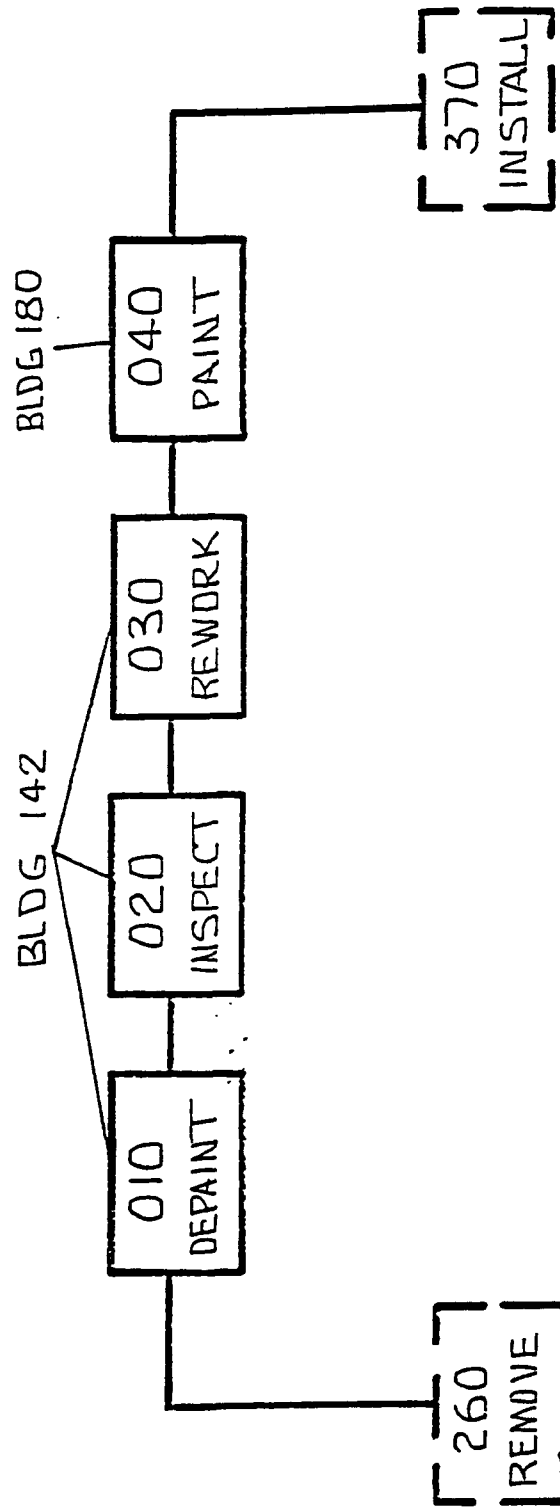
CYLINDER

(HYDRAULIC ACTUATOR, L/H LATCH)

(BLDG 140)



MBA 30B
FITTINGS



Bldg. 180
Wet Clean
Paint

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Sheet Metal
Repair Area

Sheet metal
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bet metal firm lack

Shop
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Lay-up Room

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5. **Answer:** **5. A**

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Leaving

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Doar sirop

A: 100 5000

Frame
Repair
Area

Agreement

Fixtures

John S. Tubing

Woozy 42+3

Auto Ct Ave

ONE

Auto
CLAVE

Prat: Proc Sibp

wood shop

AFCL TECHNOLOGY INSERTION PROGRAM OPERATION PROFILE INSTRUCTIONS (CONTINUED)

DATA ITEM	DESCRIPTION	SOURCE																																								
RCC	ENTER RCC NAME FOR THAT OPERATION. IF THIS RCC NAME IS NOT THE PRIMARY RCC, THE OPERATION WILL BE A BACK SHOP OPERATION. IF BACK SHOP, ENTER ONLY MANDATORY OCCURRENCE FACTOR AND MANDATORY FLOW HOURS. (6 CHARACTERS)	RCC WILL BE LISTED UNDER THE OPERATION NO. IN COLUMN 19 OF WCD.																																								
OPERATION DESCRIPTION	ENTER AN ABBREVIATED DESCRIPTION OF WORK BEING PERFORMED. LIMIT FOUR CHARACTERS. USE THE FOLLOWING ABBREVIATIONS AND CREATE ADDITIONAL ABBREVIATIONS AS REQUIRED.	ITEM 20 OF WCD																																								
	<table border="0"> <tr> <td>ABBREVIATION</td><td>DESCRIPTION</td></tr> <tr> <td>ASSY</td><td>ASSEMBLY</td></tr> <tr> <td>DIS</td><td>DISASSEMBLY</td></tr> <tr> <td>NDI</td><td>NON-DESTRUCTIVE INSPECTION</td></tr> <tr> <td>MOVE</td><td>TRAVEL BETWEEN OPERATIONS</td></tr> <tr> <td>PROC</td><td>PROCESS OPERATION</td></tr> <tr> <td>REP</td><td>REPAIR</td></tr> <tr> <td>REPL</td><td>REPLACE</td></tr> <tr> <td>MFG</td><td>MANUFACTURE</td></tr> <tr> <td>LOAD</td><td>LOAD</td></tr> <tr> <td>UNLD</td><td>UNLOAD</td></tr> <tr> <td>TEST</td><td>TEST</td></tr> <tr> <td>INSP</td><td>INSPECTION</td></tr> <tr> <td>REC</td><td>RECEIVE OF ITEM</td></tr> <tr> <td>SHIP</td><td>SHIPMENT OF ITEM</td></tr> <tr> <td>INFO</td><td>INFORMATION</td></tr> <tr> <td>MACH</td><td>MACHINING</td></tr> <tr> <td>CLN</td><td>CLEAN</td></tr> <tr> <td>IND</td><td>INDUCTION</td></tr> <tr> <td>SELL</td><td>SELL DATE</td></tr> </table>	ABBREVIATION	DESCRIPTION	ASSY	ASSEMBLY	DIS	DISASSEMBLY	NDI	NON-DESTRUCTIVE INSPECTION	MOVE	TRAVEL BETWEEN OPERATIONS	PROC	PROCESS OPERATION	REP	REPAIR	REPL	REPLACE	MFG	MANUFACTURE	LOAD	LOAD	UNLD	UNLOAD	TEST	TEST	INSP	INSPECTION	REC	RECEIVE OF ITEM	SHIP	SHIPMENT OF ITEM	INFO	INFORMATION	MACH	MACHINING	CLN	CLEAN	IND	INDUCTION	SELL	SELL DATE	EVALUATE INSTALL REVIEW WRAP DEPAINT KIT PAINT KIT APPLIED WEIGHT/BALANCE RECORD TAG/ROUTE HEAT TREAT ROUTE PLATE WELD XRAY TREAT
ABBREVIATION	DESCRIPTION																																									
ASSY	ASSEMBLY																																									
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MACH	MACHINING																																									
CLN	CLEAN																																									
IND	INDUCTION																																									
SELL	SELL DATE																																									

F-15 Speed Brake

C/N 01900A

Operation Profile

Disassembly/Assembly Profile

In/Out

Process Flow

Operation Description

OPERATION PROFILE

SPEED BRAKE

NAME BILL RICH ALC WR ALC DATE 4-21-87 RCC MANPSA SHEET 1 OF 1

OPERATION NUMBER	RCC	OPERATION DESCRIPTION	MANDATORY OCCURRENCE FACTOR	OPERATION TYPE	MANDATORY FLOW / HOURS		MAINPOWER		EQUIPMENT		DATA SOURCE COMMENTS
					%	HRS.	QTY.	%	QTY.	%	
0000	MANPSA	REC	1.00	TRANSIT							T. KERSEY (6) 4326 MECHANIC
				SETUP							M. MORRISON (6) 3615 PLANNER
				PROCESS	1.0		1	0.1			
				TRANSIT							
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SAS

OPERATION PROFILE

NAME Bill Rich

ITEM CD PCN 01900A

ALC WR

DATE 5-6-89

RCC MANPSA

WCD MB0068 WCD DATE 87364

OPER NUNB RCC OPER DESC HIST MAND OCCR TYPE F HRS CD/LVL QTY % HRS EQUIP CODE

NOTES

QTY

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SAS

OPERATION' PROFILE

NAME BILL RICH

RCC MANPSA

DATE

5-6-89

ALC WR

WCD

ITEM CD PCN 019000A

WCD MB006B WCD DATE 87364

NOTES

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CAYLOR Dyer
ENGINEER

SAS
5-6-84

OPERATION PROFILE

DATE

ALC WR

WCD MB006B WCD DATE 87364

WCD MB006B

NAME Pull Rich

ITEM CD PCN 01900A

OPER NUMB

RCC

OPER DESC

HIST MAND

OCOR TYPE

F HRS

MAND

SKILL

CD/LVL

QTY

%

HRS

EQUIP

CODE

NOTES

QTY % HRS

RCC MANPSA

150 MANPSA MOVE 0.94 T 0

150 MANPSA MOVE 1.00 1.0 S 0

150 MANPSA MOVE 0.47891 P 2 0.3

160 MANPCD PNT 0.94 T 1.0 47891 1 0.5

160 MANPCD PNT 1.00 10 S 0

160 MANPCD PNT 30.0 P 0

170 MANPCD WRAP 0.94 T 0

170 MANPCD WRAP 1.00 10 S 0

170 MANPCD WRAP 2.0 P 0

180 MANPSA ASSY 0.94 T 1.0 49533 1 0.5

180 MANPSA ASSY 1.00 1.0 S 0

180 MANPSA ASSY 0.47891 P 1X 0.5

B.C.D.C. 180

SAS

Bill Rich

OPERATION PROFILE

ALC WR

DATE

5-6-89

RCC MANPSA

WCD MB006B WCDDATE 87364

ITEM CD PCN 01900A

OPER NUMB

RCC MANPSA

INS 0.94

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EQUIP CODE

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190 MANPSA INS 10 S 0 0 47891 12 0.1

190 MANPSA INS 10 S 0 0 47891 12 0.1

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200 MANPSA ASSY 10 S 0 0 47891 12 0.3

210 MANPSA MOVE 0.94 T 0 0 47891 12 0.3

210 MANPSA MOVE 10 S 0 0 47891 12 0.3

210 MANPSA MOVE 10 S 0 0 47891 12 0.3

DISASSEMBLY/ASSEMBLY I LE

F-15 SPEED BRAKE

NAME BILL RICH ALC WR-ALC DATE 4-28-89 RCC INPSA SHEET 1 OF 1

TOP ASSEMBLY			REMOVAL OPERATION NUMBER	INSTALLATION OPERATION NUMBER	SUBASSEMBLY			SAME REMOVED ITEM INSTALLED MTO ASST. Y/N
ITEM NUMBER	WCD	WCD DATE			ITEM NUMBER	CHILD WCD	CHILD WCD DATE	
PCN								
NSH								
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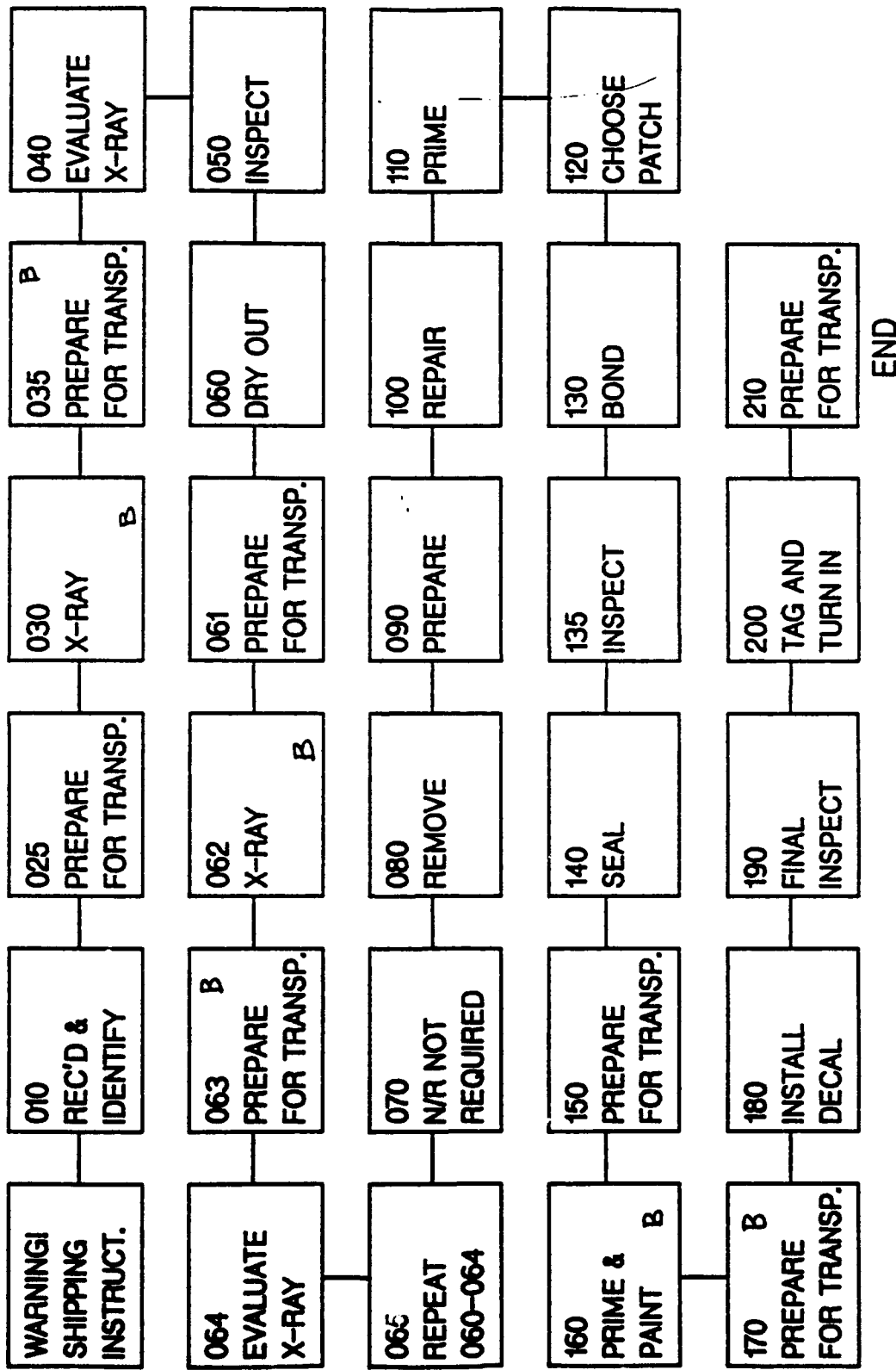
WCD=MB006B

PCN=01900A

BILL RICH
4-25-89

F-15 SPEED BRAKE

START



AFLC TECHNOLOGY INSERTION PROGRAM OPERATION PROFILE INSTRUCTIONS (CONTINUED)

DATA ITEM	DESCRIPTION	SOURCE
RCC	ENTER RCC NAME FOR THAT OPERATION. IF THIS RCC NAME IS NOT THE PRIMARY RCC, THE OPERATION WILL BE A BACK SHOP OPERATION. IF BACK SHOP, ENTER ONLY MANDATORY OCCURRENCE FACTOR AND MANDATORY FLOW HOURS. (6 CHARACTERS)	RCC WILL BE LISTED UNDER THE OPERATION NO. IN COLUMN 19 OF WCD.
OPERATION DESCRIPTION	ENTER AN ABBREVIATED DESCRIPTION OF WORK BEING PERFORMED. LIMIT FOUR CHARACTERS. USE THE FOLLOWING ABBREVIATIONS AND CREATE ADDITIONAL ABBREVIATIONS AS REQUIRED.	ITEM 20 OF WCD
ABBREVIATION	DESCRIPTION	EVALUATE
ASSY	ASSEMBLY	INSTALL
DIS	DISASSEMBLY	REVIEW
NDI	NON-DESTRUCTIVE INSPECTION	WRAP
MOVE	TRAVEL BETWEEN OPERATIONS	DEPAINT
PROC	PROCESS OPERATION	KIT
REP	REPAIR	PAINT
REPL	REPLACE	NAT APPLIED
MFG	MANUFACTURE	WEIGHT/BALANCE
LOAD	LOAD	RECORDS
UNLD	UNLOAD	TAG/ROUTE
TEST	TEST	HEAT TREAT
INSP	INSPECTION	ROUTE
REC	RECEIVE OF ITEM	PLATE
SHIP	SHIPMENT OF ITEM	WELD
INFO	INFORMATION	XRAY
MACH	MACHINING	TREAT
CLN	CLEAN	
IND	INDUCTION	
SELL	SELL DATE	

C-141 Access Door
C/N 51352A/51353A

Operation Profile

Disassembly/Assembly Profile

In/Out

Process Flow

Operation Description

NAME BILL RICH ALC WR ALC DATE 4-22-89 RCC MANPSA OPERATION P FILE SHEET 1 OF 1

1.5C-2(MM)2C

NAME Bill Rich OPERATION PROFILE SAS
 ITEM CD PCN 51352A ALC WR DATE 5-4-89 RCC MANPSA

WCD MBO10B WCD DATE 88026

OPER NMB RCC OPER HIST MAND OPER MAND SKILL EQUIP
 DESC OCCR TYPE F HRS CD/LVL QTY % HRS CODE

10 MANPDD CLN 0.99 T 1.0 49534 1 0.5

10 MANPDD CLN 1.0 S 0.

10 MANPDD CLN 15.0 P

15 MANPSE INS 1.00 T 1.0 9AD14 1 0.5

15 MANPSE INS 1.0 S 0.

15 MANPSE INS 1.0 P 0. 47891 1 1.0

20 MANPSC DIS 1.00 T 1.0 49534 1 0.5

20 MANPSC DIS 1.0 S 0.

20 MANPSC DIS 1.0 P 0. 47891 1 4.0

40 MANPSA ASSY 1.00 T 1.0 47891 1 0.5

40 MANPSA ASSY 1.0 S 0.

40 MANPSA ASSY 1.0 P 0. 47891 1 1.0

50 MANPSA ASSY 1.00 T 0.

BUDG
 180

[illegible]

OPERATION PROFILE SAS

NAME	ITEM CD	PCN	51352A	WCD	MB010B	ALC	WR	DATE	WCD	DATE	88026	QTY	%	HRS	EQUIP	CODE	QTY	%	HRS	NOTES
OPER	NUMB	RCC	MANPSA	ASSY	1.0	S	0.													
90	MANPSA	ASSY	1.00	T	0.															
90	MANPSA	ASSY	1.00	T	0.															
100	MANPSA	ASSY	1.00	T	0.															
100	MANPSA	ASSY	1.00	T	0.															
100	MANPSA	ASSY	1.00	T	0.															
100	MANPSA	ASSY	1.00	T	0.															
110	MANPSA	INS	1.00	T	0.															
110	MANPSA	INS	1.00	T	0.															
110	MANPSA	INS	1.00	T	0.															
130	MANPSA	ASSY	1.00	T	0.															
130	MANPSA	ASSY	1.00	T	0.															
130	MANPSA	ASSY	1.00	T	0.															
140	MANPSA	ASSY	1.00	T	0.															
140	MANPSA	ASSY	1.00	T	0.															

AUTOCLAVE

SHEET 4 OF 5

SAS

OPERATION PROFILE

NAME _____

ITEM CD PCN 51352A

ALC WR

DATE

WCD MB010B WDDATE 88026

OPER NUMB RCC OPER DESC HIST MAND OPER MAND F HRS SKILL CD/LVL QTY % HRS EQUIP CODE

QTY % HRS NOTES

140 MANPSA ASSY . . . P 0 47891 1 1.0

150 MANPSC ASSY 1.00 . T 1.0 9A014 1 0.5

150 MANPSC ASSY . 10 S 0 .

150 MANPSC ASSY . . P 8.0 .

170 MANPDC PUT 0.99 . T 1.0 49534 1 0.5

170 MANPDC PUT . 10 S 0 .

170 MANPDC PUT . . P 20.0

180 MANPSC ASSY 1.00 . T 1.0 49534 1 0.5

180 MANPSC ASSY . 10 S 0 .

180 MANPSC ASSY . . P 0 49534 1 1.0

190 MANPSC ASSY 1.00 . T 0 .

190 MANPSC ASSY . 10 S 0 .

BLO 2
130

SAS

OPERATION PROFILE

NAME	ITEM CD	PCN	51352A	ALC	WR	WCD	MB010B	WCDDATE	88026	DATE	RCC	MANPSA	QTY	%	HRS	NOTES
OPER NUMB	RCC	MANPSA	OPER DESC	HIST OCCR	MAND OCCR	OPER TYPE	MAND F	SKILL CD/LVL	QTY	%	HRS	EQUIP CODE	QTY	%	HRS	NOTES
190	A	MANPSA	ASSY	.	.	P	0	49534	1	1.0	.	.	.	.	.	.
200	A	MANPSA	ASSY	1.00	.	T	0	.	.	.	.	.	.	.	.	.
200	A	MANPSA	ASSY	.	1.0	S	0	.	.	.	.	.	.	.	.	.
200	A	MANPSA	ASSY	.	.	P	0	49534	1	2.0	.	.	.	.	.	.
220	A	MANPSA	ASSY	1.00	.	T	0	.	.	.	.	.	.	.	.	.
220	A	MANPSA	ASSY	.	1.0	S	0	.	.	.	.	.	.	.	.	.
220	A	MANPSA	ASSY	.	.	P	0	49534	1	0.5	.	.	.	.	.	.

ASSEMBLY / USASSEMBLY

THREE IS EXISTING
ATTACHED LIST DATED
10/14/88 BOB SCOTT

DISASSEMBLY/ASSEMBLY PROFILE

NAME BILL RICH ALC WR-ALC DATE 4-28-89 RDC MAN PSA SHEET 1 OF 2

TOP ASSEMBLY				REMOVAL OPERATION NUMBER	INSTALLATION OPERATION NUMBER	SUBASSEMBLY			SAME REMOVED ITEM INSTALLED ONTO ASSY. Y/N
ITEM NUMBER	WCD	WCD DATE	ITEM NUMBER			CHLD WCD	CHLD WCD DATE		
PCN NSN PIN 3P21698-101	MB010B	88026	020	150	PCN NSN PIN				
PCN NSN PIN 3P21697-111					PCN NSN PIN				
PCN NSN PIN 3P21513-121					PCN NSN PIN				
PCN NSN PIN 3P96002-107					PCN NSN PIN				
PCN NSN PIN 3P21513-119					PCN NSN PIN				
PCN NSN PIN 3P21513-117					PCN NSN PIN				
PCN NSN PIN 3P21522-103					PCN NSN PIN				
PCN NSN PIN 3P21903-101					PCN NSN PIN				
PCN NSN PIN 3P21515-105					PCN NSN PIN				
PCN NSN PIN 3P21525-101					PCN NSN PIN				
PCN NSN PIN 3P21526-101					PCN NSN PIN				
PCN NSN PIN 3P21904-101	MB010B	88026	020	150	PCN NSN PIN				

LSC-21XW35A

DISASSEMBLY/ASSEMB. 'ROFILE

NAME BILL RICH ALC WR-ALC DATE 4-28-89 ROC MANPSA SHEET 2 OF 2

TOP ASSEMBLY			REMOVAL OPERATION NUMBER	INSTALLATION OPERATION NUMBER	SUBASSEMBLY			SAME REMOVED ITEM RECALLED INTO ASST. Y/N
ITEM NUMBER	WCD	WCD DATE			ITEM NUMBER	CHLD WCD	CHLD WCD DATE	
PCN NSN PIN 3P21904-102	MB010B	88026	020	150	PCN NSN PIN			
PCN NSN PIN 3P21909-101					PCN NSN PIN			
PCN NSN PIN S189-8					PCN NSN PIN			
PCN NSN PIN 3P21905-101					PCN NSN PIN			
PCN NSN PIN 56385-101					PCN NSN PIN			
PCN NSN PIN 3P21919-101	MB010B	88026	020	156	PCN NSN PIN			
PCN NSN PIN					PCN NSN PIN			
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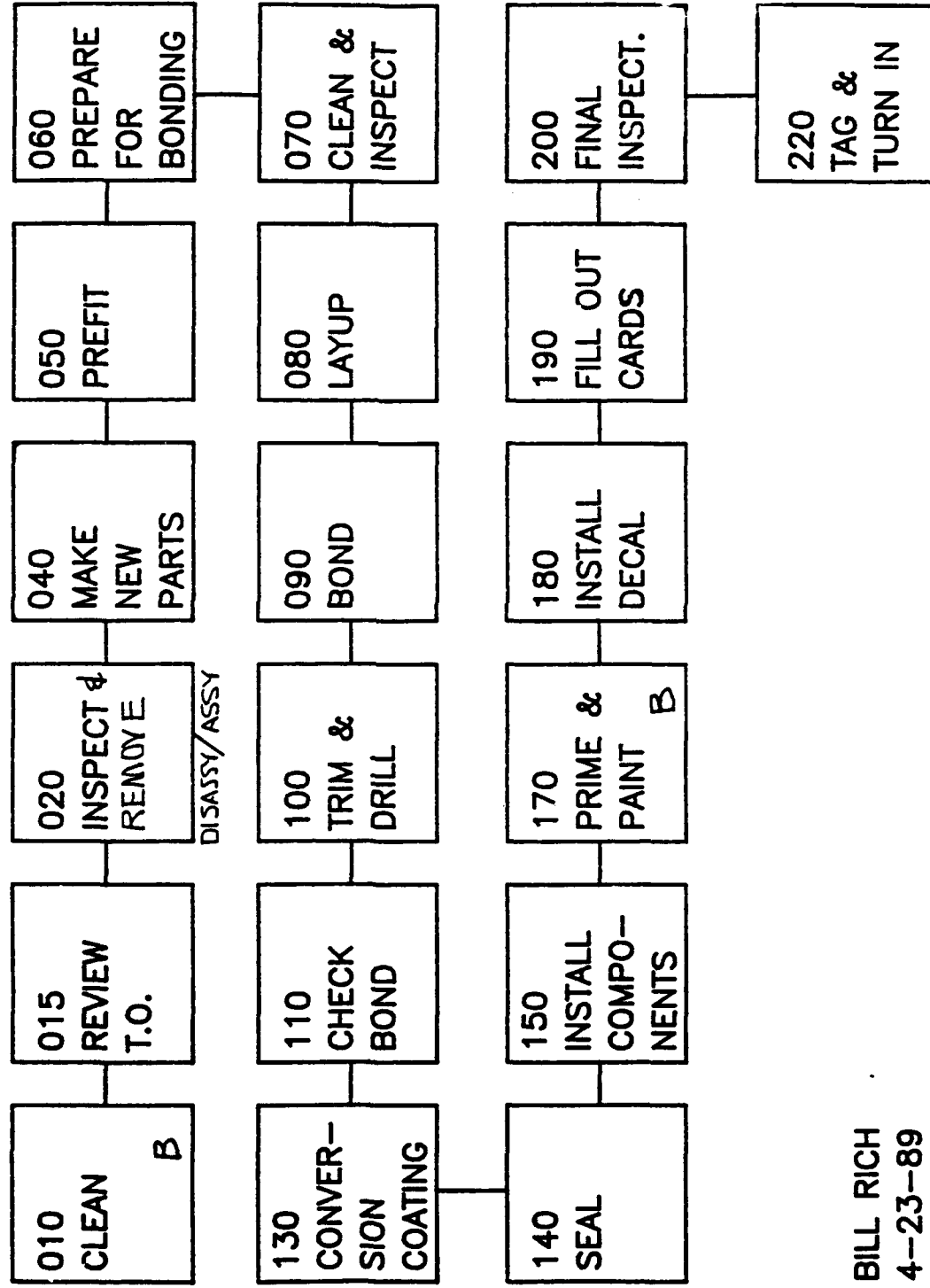
MANPSA

WCD=MB010B

PCN=51352A/51353A=

C-141 COWL ACCESS DOOR

START



BILL RICH
4-23-89

END

AFLC TECHNOLOGY INSERTION PROGRAM OPERATION PROFILE INSTRUCTIONS (CONTINUED)

DATA ITEM

DESCRIPTION

SOURCE

RCC

ENTER RCC NAME FOR THAT OPERATION. IF THIS RCC NAME IS NOT THE PRIMARY RCC, THE OPERATION WILL BE A BACK SHOP OPERATION. IF BACK SHOP, ENTER ONLY MANDATORY OCCURRENCE FACTOR AND MANDATORY FLOW HOURS. (6 CHARACTERS)

RCC WILL BE LISTED UNDER THE OPERATION NO. IN COLUMN 19 OF WCD.

OPERATION
DESCRIPTION

ENTER AN ABBREVIATED DESCRIPTION OF WORK BEING PERFORMED. LIMIT FOUR CHARACTERS. USE THE FOLLOWING ABBREVIATIONS AND CREATE ADDITIONAL ABBREVIATIONS AS REQUIRED.

ITEM 20 OF WCD

ABBREVIATION

DESCRIPTION

ASSY
DIS
NDI
MOVE
PROC
REP
REPL
MFG
LOAD
UNLD
TEST
INSP
REC
SHIP
INFO
MACH
CLN
IND
SELL

ASSEMBLY
DISASSEMBLY
NON-DESTRUCTIVE INSPECTION
TRAVEL BETWEEN OPERATIONS
PROCESS OPERATION
REPAIR
REPLACE
MANUFACTURE
LOAD
UNLOAD
TEST
INSPECTION
RECEIVE OF ITEM
SHIPMENT OF ITEM
INFORMATION
MACHINING
CLEAN
INDUCTION
SELL DATE

EVRL
INST

REV
WRAP
DEP
KIT
PINT
NA
WTRG
REL
TAG

EVRL UNTE
INSTALL

REVIEW
WRAP
DEPAINT
KIT
PAINT
NOT APPLIED
WEIGHT/BALANCE
RECORDS
TAG/ROUTE

HEAT REAT

ROUTE

PLATE

WELD

XRAY

TREAT

HT

RTE

PLT

WELD

XRAY

TRT

C-141 Leading Edge
C/N 51418A/51419A

Operation Profile

Disassembly/Assembly Profile

In/Out

Process Flow

Operation Description

OPERATION PROFILE

NAME <u>BILL RICH</u> ALC <u>WR ALC</u> DATE <u>4-22-89</u> RCC <u>MANPSA</u> SHEET <u>1</u> OF <u>1</u>		WCD <u>MB032B</u> WCD DATE <u>88021</u>									
OPERATION NUMBER	RCC	OPERATION DESCRIPTION	MANDATORY OCCURRENCE FACTOR	OPERATION TYPE	MANDATORY FLOW HOURS % HRS.	MANPOWER QTY.	TIME REQUIRED % HRS.	EQUIPMENT CODE	QTY.	TIME REQUIRED % HRS.	DATA SOURCE COMMENTS
0000	MANPSA	REC	1.00	TRANSIT							L. DAVIS (6) 3141 MECHANIC
				SETUP							
				PROCESS							M. MORRISON (6) 3615 PLANNER
				TRANSIT							
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SHEET 1 OF 7

SAS
DATE 5-5-89

RCC MANPSA

OPERATION PROFILE

ALC WR

DATE

WCD MB032B WCDDATE 88021

NAME Bar Rct

ITEM CD PCN 51418A

OPER NOMB
RCC
MANPDD CLN 1.00 . T 10 49533 1 0.5

OPER HIST MAND OPER MAND SKILL
DESC OCCR TYPE F HRS CD/LVL QTY % HRS EQUIP
CODE

NOTES

QTY % HRS

BLDG 180

3 MANPDD CLN 1.0 S 0.

3 MANPDD CLN . P 15.0

10 MANPSA ASSY 1.00 . T 10 49533 1 0.5

10 MANPSA ASSY 1.0 S 0.

10 MANPSA ASSY . P 0. 49534 1 0.2

10 MANPSA ASSY . P 0. 47891 1 0.2

15 MANPSA INS 1.00 . T 0.

15 MANPSA INS 1.0 S 0.

15 MANPSA INS . P 0. 49534 1 1.0

15 MANPSA INS . P 0. 47891 1 1.0

20 MANPSA DIS 1.00 . T 0.

20 MANPSA DIS 1.0 S 0.

NAME Bill Rich

OPERATION PROFILE SAS

SHEET 2 OF 7

RCC MANPSA

S-589

DATE

ALC WR

WCD

MBO32B

WCDDATE

88021

ITEM CD

PCN

51418A

OPER

DESC

HIST

MAND

OPER

TYPE

F

HRS

MAND

SKILL

CD/LVL

QTY

% HRS

EQUIP

CODE

QTY

% HRS

NOTES

20

MANPSA

DIS

10

P

0

49534

1

3.0

20

MANPSA

DIS

P

0

47891

1

3.0

30

MANPSA

PROC

1.00

T

0

30

MANPSA

PROC

S

0

30

MANPSA

PROC

10

P

0

49534

1

4.0

30

MANPSA

PROC

P

0

47891

1

4.0

40

MANPSA

ASSY

1.00

T

0

40

MANPSA

ASSY

10

S

0

40

MANPSA

ASSY

P

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49534

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3.0

40

MANPSA

ASSY

P

0

47891

1

3.0

50

MANPSA

ASSY

1.00

T

0

50

MANPSA

ASSY

10

S

0

SAS

OPERATION PROFILE

NAME BILL RICH

ITEM CD PCN 51418A

ALC WR

DATE

5-5-89

RCC MANPSA

WCD MB032B WCDDATE 88021

OPER NUMB

RCC

MANPSA ASSY

OPER HIST MAND OPER MAND

TYPE F HRS

SKILL CD/LVL

QTY

% HRS

EQUIP CODE

QTY

% HRS

NOTES

50 MANPSA ASSY . . . P 0. 49534 1 . 4.0

50 MANPSA ASSY . . . P 0. 47891 1 . 4.0

60 MANPSA PROC 1.00 . T 0.

60 MANPSA PROC . 1.0 S 0.

60 MANPSA PROC . . P 0. 49534 1 . 1.0

60 MANPSA PROC . . P 0. 47891 1 . 1.0

70 MANPSA ASSY 1.00 . T 0.

70 MANPSA ASSY . 1.0 S 0.

70 MANPSA ASSY . . P 0. 49534 1 . 5.0

70 MANPSA ASSY . . P 0. 47891 1 . 5.0

80 MANPSA ASSY 1.00 . T 0.

80 MANPSA ASSY . 1.0 S 0.

80 MANPSA ASSY . . P 0. 49534 1 . 4.0

SAS

OPERATION PROFILE

NAME BILL RICH

ITEM CD PCN 51418A ALC WR DATE 5-5-89 WCD MB032B WCD DATE 88021

OPER NMB RCC OPER HIST MAND OPER SKILL EQUIP
DESC OCCR TYPE F HRS CD/LVL QTY % HRS CODE NOTES

90	MANPSA	ASSY	.	.	P	20.0	47891	1	.	4.0	1191	1	.	3.5	
90	MANPSA	ASSY	1.00	.	T	0		.	.	.		.	.	.
90	MANPSA	ASSY	.	.	S	0		.	.	.		.	.	.
90	MANPSA	ASSY	.	10	P	0	49534	1	.	2.0		.	.	.	
90	MANPSA	ASSY	.	.	P	0	47891	1	.	2.0		.	.	.	
100	MANPSA	ASSY	1.00	.	T	0		.	.	.		.	.	.
100	MANPSA	ASSY	.	.	S	0		.	.	.		.	.	.
100	MANPSA	ASSY	.	10	P	0	49534	1	.	4.0		.	.	.	
100	MANPSA	ASSY	.	.	P	20.0	47891	1	.	4.0	1191	1	.	3.5	
110	MANPSA	ASSY	1.00	.	T	0		.	.	.		.	.	.
110	MANPSA	ASSY	.	10	S	0		.	.	.		.	.	.
110	MANPSA	ASSY	.	.	P	0	49534	1	.	3.0		.	.	.	

SAS

OPERATION PROFILE

NAME Bill Rich

ITEM CD PCN 51418A

ALC WR

DATE

5-5-89

WCD M80328 WCDDATE 88021

OPER NUMB RCC OPER HIST MAND OPER MAND SKILL
DESC OCCR TYPE F HRS CD/LVL

RCC MANPSA

NOTES

QTY % HRS

EQUIP
CODE

QTY % HRS

3.0

47891

0

P

110 MANPSA ASSY

0

T

120 MANPSA ASSY 1.00

0

S

120 MANPSA ASSY

0

P

120 MANPSA ASSY

49534

1.5

0

P

120 MANPSA ASSY

47891

1.5

0

T

130 MANPSA ASSY 1.00

0

S

130 MANPSA ASSY

0

P

130 MANPSA ASSY

49534

0.5

0

P

130 MANPSA ASSY

47891

0.5

0

T

150 MANPSA ASSY 1.00

0

S

150 MANPSA ASSY

0

P

150 MANPSA ASSY

49534

2.5

0

P

150 MANPSA ASSY

47891

2.5

SAS

OPERATION PROFILE

NAME Bill Rich

ITEM CD PCN 51418A

ALC WR

DATE

5-5-89

WCD MB032B WCDDATE 88021

RCC MANPSA

QTY

%

HRS

NOTES

OPER NUMB

RCC

DESC

HIST

MAND

OPER

TYPE

F HRS

CD/LVL

QTY

%

HRS

EQUIP

CODE

QTY

%

HRS

NOTES

180 MANPSA ASSY 0.92 . T 0.

180 MANPSA ASSY 1.0 S 0.

180 MANPSA ASSY . P 0. 49534 1 . 1.0

180 MANPSA ASSY . P 0. 47891 1 . 1.0

170 MANPSA ASSY 1.00 . T 0.

170 MANPSA ASSY . S 0.

170 MANPSA ASSY 1.0 P 0. 49534 1 . 0.5

170 MANPSA ASSY . P 0. 47891 1 . 0.5

180 MANPDD TRT 1.00 . T 1.0 49534 1 . 0.5

180 MANPDD TRT 1.0 S 0.

180 MANPDD TRT . P 20.0

180 MANPDD PNT 1.00 . T 1.0 49534 1 . 0.5

SAS

OPERATION PROFILE

NAME BILL RICH

RCC MANPSA

DATE

5-5-89

WCDDATE 88021

WCD MB032B

ALC WR

ITEM CD PCN 51418A

OPER NUMB	RCC	MANPSA	DESC	HIST OCCR	MAND TYPE	OPER F	MAND HRS	SKILL CD/LVL	QTY	%	HRS	EQUIP CODE	QTY	%	HRS	NOTES
190		MANPDD	PNT				0									
190		MANPDD	PNT		P		20.0									
200		MANPSA	ASSY	0.92		T		4.049533	1		0.5					
200		MANPSA	ASSY			S	0									
200		MANPSA	ASSY			P	0	47891	1		0.2					
210		MANPSA	ASSY	0.92		T	0									
210		MANPSA	ASSY			S	0									
210		MANPSA	ASSY			P	0	47891	1		0.2					
220		MANPSA	ASSY	1.00		T	0									
220		MANPSA	ASSY			S	0									
220		MANPSA	ASSY			P	0	47891	1		0.1					

SAS

6:56 FRIDAY, FEBRUARY 24, 1989 8

PART OPERATION SUMMARY

PN: 3W22000-314 ALC: WARNER ROBBINS RCC: MANPSA SHEETMETAL, ADHESIVE BONDING PCN: 51418A WCD: MB032B WCD DATE: 88021
OPERATION: ZPRT NSN:
SAMPLE SIZE: 11 MISSING FLOWTIMES: 0 PRIMARY OPERATION TYPE: ASSY MATERIAL TYPE: AL
OUTLIERS DELETED: 1

----- MANPOWER REQUIRED ----- EQUIPMENT REQUIRED -----
SKILL QTY FRACTION TIME HOURS CODE CATEGORY QTY FRACTION TIME HOURS BATCH
MIN MAX

HISTORICAL DATA

ACTUAL FREQ	RELATIVE FREQUENCY										DISTRIBUTION	PARAMETERS	D VALUE	D ALPHA
	0	10	20	30	40	50	60	70	80	90					100
0	0	0	0	0	0	0	0	0	0	0	UNIFORM	27.0	0.437	0.03
5	0	0	0	0	0	0	0	0	0	0	TRIANGULAR	27.0	0.275	1.00
10	0	0	0	0	0	0	0	0	0	0	NORMAL	37.0	0.165	1.00
15	0	0	0	0	0	0	0	0	0	0	LOGNORMAL	37.0	1.000	1.00
20	0	0	0	0	0	0	0	0	0	0	EXPONENTIAL	38.9	0.422	0.03
25	18	*****												

OCCURRENCE FACTOR: . OCCURRENCES: 12
DISTRIBUTION OF CHOICE: NORMAL

NAME BILL RICH ALC WR-ALC DATE 4-27-89 ROC MANPSA SHEET 1 OF 1

TOP ASSEMBLY				REMOVAL OPERATION NUMBER		INSTALLATION OPERATION NUMBER		SUBASSEMBLY				SAME REMOVED ITEM REINSTALLED INTO ASST. Y/N	
ITEM NUMBER	WCD	WCD DATE						ITEM NUMBER	CHLD WCD	CHLD WCD DATE			
PCN NSN PIN								PCN NSN PIN					
(SEE ATTACHED SHEET)													
PCN NSN PIN								PCN NSN PIN					
THE FOLLOWING PCN'S, 51419A(S1429A/S1480A),													
PCN NSN PIN								PCN NSN PIN					
ON RCC MANPSA FOR WCD MB032B CONSTITUTE A													
PCN NSN PIN								PCN NSN PIN					
REPLACEMENT OF APPROXIMATELY 98% OF ALL COMPONENT													
PCN NSN PIN								PCN NSN PIN					
PARTS:													
PCN NSN PIN								PCN NSN PIN					
"DISASSEMBLY / ASSEMBLY" FOR THESE "TOP ASSEMBLYS"													
PCN NSN PIN								PCN NSN PIN					
AS NOT APPLICABLE.													
PCN NSN PIN								PCN NSN PIN					
H.V. "Bill" Rich,													
PCN NSN PIN								PCN NSN PIN					
4-28-89													
PCN NSN PIN								PCN NSN PIN					
PCN NSN PIN								PCN NSN PIN					
PCN NSN PIN								PCN NSN PIN					

LSC-2(KK)SA

ENTER 6 POSITION PRODUCTION NR. AND SEND =514186

DATA BASE MC OPENED BY FGM MMPPA AT TIME 12.38.34

DTE-LAST-UPDT = 88/01/27

TME-LAST-UPDT = 20.58.46

CYCLE NUMBER = 22803

OPTION 3 - DISPLAY BOM WITH MFG PART NRS BY PDN

PAGE

PDN EI-IDENTITY ENGR OPER SUCC RGC DATE-EST DATE-LA INDEX

514186 1560009189170JH MANEBF 00100 100 J 66248 87191 82

COMP-STOCK-NR UFA STD MI C M UI E P I UNIT-PRICE *I&S* MFG-PART-NR FSCM

1560P003561F	1	100	BM	A	D	EA	N	M	U	221.54	B	X3W22005-102CAF	98897
✓1560P071803F	1	75	BM	A	D	EA	N	M	U	95.57	B	✓3W22194-104STAL	✓99999
1560P078562F	1	100	BM	A	D	EA	N	M	U	137.92	B	✓3W22000-110DOUB	✓98897
1560P078564F	1	100	BM	A	D	EA	N	M	U	212.66	B	✓3W22000-112DOUB	✓98897
1560P078566F	2	100	BM	A	D	EA	N	M	U	46.70	B	2 ✓3W22000-120 DOU	✓99999

1560P078570F	1	100	BM	A	D	EA	N	M	U	73.85	B	1 ✓3W22000-146DOUB	✓98897
												✓3W22000-146DOUB	✓99999

1560P078574F	1	100	BM	A	D	EA	N	M	U	92.31	B	✓3W22000-230STR	✓99999
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1560P078578F	1	100	BM	A	D	EA	N	M	U	85.16	B	✓3W22000-234STR	✓99999
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1560P082735F	1	100	BM	A	D	EA	N	M	U	87.55	B	✓3W22000-309LOUE	✓99999
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1560P082737F	1	100	BM	A	D	EA	N	M	U	71.63	B	✓3W22000-309LOUE	✓99999
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1560000127710JH	1	100	BM	A	D	EA	N	M	U	66.33	B	✓3A30153-10135AL	✓99999
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15600001728661JH	1	100	BM	A	D	EA	N	M	U	687.86	B	✓3W22000-10409KI	✓98897
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15600003981745JH	1	100	BM	A	D	EA	N	M	U	388.79	B	✓3W22000-12619KI	✓98897
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15600003961749JH	1	100	BM	A	D	EA	N	M	U	194.39	B	✓3W22000-10619KI	✓98897
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✓1560004637878JH	1	80	BM	A	D	EA	P	M	U	353.01	B	✓3W22087-114DOOR	✓98897
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✓1560007383138JH	1	15	BM	A	D	EA	N	M	U	2035.29	B	✓3W22022-114DOOR	✓99999
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1560007389789JH	1	100	BM	A	D	EA	N	M	U	12.35	B	✓3A30154-103FLNE	✓98897
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1560007389823JH	1	100	BM	A	D	EA	N	M	U	77.83	B	✓3A30154-103RET	✓99999
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1560010101640JH	1	100	BM	A	D	EA	N	M	U	88.63	B	✓3W22127-101RETA	✓99999
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1560011021162JH	2	100	BM	A	D	EA	N	M	U	47.73	B	2 ✓3W22006-296PAN	✓98897
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1560012626381JH	1	100	BM	A	D	EA	N	M	U	367.96	B	✓3W22007-106	✓98897
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1560012640440JH	1	100	BM	A	D	EA	N	M	U	127.06	B	✓3W22007-106CAF	✓99999
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												✓3W22000-298	✓98897
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												✓3W22000-298PAN	✓99999
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1560012682033JH	1	100	BM	A	D	EA	N	M	U	230.23	B	✓3W22092-104	✓98897
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												✓3W22092-104PAN	✓99999
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5310002071467	0	0	EM	L	I	HD	N	F	U	3.03	B	MS21042-3	35044
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												MS21042-3	98506
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												MS21042-3 NUT	61349
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5310009419413	0	0	EM	L	I	HD	N	F	U	.50	B	✓LB598483M	✓98897
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OPTION 3 - DISPLAY BOM WITH MFG PART NRS BY PDN

PAGE

U TERMINATE THIS OPTION ENTER XSELF AND BL D

ENTER 6 POSITION PRODUCTION NR AND SEND =51419A

DATA BASE MO OPENED BY PGM MMPPA AT TIME 12.39.16

DTE-LAST-UPDT = 88/01/27

TME-LAST-UPDT = 20.58.46

CYCLE NUMBER = 22803

OPTION 3 - DISPLAY BOM WITH MFG PART NRS BY PDN

PAGE

PDN	EI-IDENTITY	ENGR	OPER	OCC	RGC	DATE-EST	DATE-LA	INDEX					
51419A	1530009189139JH	MANEBF	00100	100	J	66248	87191	85					
CCMP-STOCK-NR	UPA	STD	MI	C	M	UI	E	P	I	UNIT-PRICE	*I&S*	MFG-PART-NR	FSCM
✓ 1530P000510F	2	100	BM	A	D	EA	N	M	U	129.23	B	3W22000-295PAN	98897
✓ 1530P000510F	1	100	BM	A	D	EA	N	M	U	99.91	B	3W22000-297PAN	98897
✓ 1530P000510F	1	100	BM	A	D	EA	N	M	U	263.90	B	3W22007-103CAP	98897
✓ 1530P078561F	1	100	BM	A	D	EA	N	M	U	175.93	B	3W22000-109DOUB	98897
✓ 1530P078563F	1	100	BM	A	D	EA	N	M	U	160.73	B	3W22000-111DOUB	98897
✓ 1530P078569F	1	100	BM	A	D	EA	N	M	U	87.97	B	3W22000-143DOUB	98897
												3W22000-145DOUB	99999
✓ 1530P078573F	1	100	BM	A	D	EA	N	M	U	142.27	B	3W22000-2298TRA	98897
✓ 1530P078577F	1	100	BM	A	D	EA	N	M	U	63.16	B	3W22000-2338TRA	98897
✓ 1530P082733F	1	100	BM	A	D	EA	N	M	U	87.03	B	3W22000-309DOUB	98897
✓ 1530P142670F	1	41	BM	A	D	EA	N	M	U	601.45	B	3W22000-253DOUB	98897
✓ 1530000127710JH	1	100	BM	A	D	EA	N	M	U	66.38	B	3W22000-103PAN	98897
✓ 15300017238270JH	1	100	BM	A	D	EA	N	M	U	654.98	B	3W22000-103BKI	98897
✓ 1530002507399JH	1	100	BM	A	D	EA	N	M	U	169.42	B	3W22000-125ISKI	98897
✓ 1530002936116JH	1	75	BM	A	D	EA	N	M	U	140.57	B	3W22194-1038TAL	98897
✓ 1530003176727JH	1	100	BM	A	D	EA	N	M	U	161.36	B	3W22000-104ISKI	98897
✓ 1530005700260JH	1	25	BM	A	D	EA	P	M	U	718.06	B	3W22067-113DOOR	98897
✓ 1530007389789JH	1	100	BM	A	D	EA	N	M	U	12.58	B	3W22054-103FINE	98897
✓ 1530007389820JH	1	100	BM	A	D	EA	N	M	U	77.50	B	3W22054-103RET	98897
✓ 1530010101640JH	1	100	BM	A	D	EA	N	M	U	60.62	B	3W22107-101RITA	98897
✓ 153001030377JH	2	100	BM	A	D	EA	N	M	U	62.13	B	3W22000-119	98897
✓ 1530012626330JH	1	100	BM	A	D	EA	N	M	U	149.67	B	3W22000-119DOUB	98897
												3W22005-101	98897
												3W22005-101CAP	98897
3310008071457	0	0	BM	L	I	HD	N	F	U	3.03	B	3W22005-101KID	98897
3310009417413	0	0	BM	L	I	HD	N	F	U	.50	B	MS21042-3	66044
												MS21042-3	96506
												MS21042-3 NUT	61344
												LS395483M	98897

OPTION 3 - DISPLAY BOM WITH MFG PART NRS BY PDN

PAGE

TO TERMINATE THIS OPTION ENTER XEOF AND SEND

ITER 6 POSITION PRODUCTION NR AND SEND =31427A

DATA BASE MC OPENED BY PGM MMPPA AT TIME 12.41:03
DTE-LAST-UPDT = 88/01/27.
TME-LAST-UPDT = 20.58.46.
CYCLE NUMBER = 22803

OPTION 3 - DISPLAY BOM WITH MFG PART NRS BY PDN										PAGE
PDN	EI-IDENTITY	ENGR	OPER	QCC	RGC	DATE-EST	DATE-LA	INDEX		
51429A	1560007325512JH	MANEBF	00100	100	J	73173	27191	86		
COMP-STOCK-NR	UPA	STD	MI	C	M	UI	E	P	I	
UNIT-PRICE	*125*	MFG-PART-NR	FSCM							
1560P000510F	2	100	BM	A	D	EA	N	M	U	
1560P081907F	1	100	BM	A	D	EA	N	M	U	
1560P082736F	1	100	BM	A	D	EA	N	M	U	
1560P085690F	2	100	BM	A	D	EA	N	M	U	
1560P111725F	1	60	BM	A	D	EA	N	M	U	
1560P111727F	1	100	BM	A	D	EA	N	M	U	
1560001728655JH	1	100	BM	A	D	EA	N	M	U	
1560003176708JH	1	100	BM	A	D	EA	N	M	U	
1560003961751JH	1	100	BM	A	D	EA	N	M	U	
1560003961752JH	1	100	BM	A	D	EA	N	M	U	
1560007383134JH	2	10	BM	A	D	EA	N	M	U	
1560010101540JH	2	0	BM	A	D	EA	N	M	U	
15100083971467	0	0	BM	A	D	EA	N	M	U	
1510009415413	1	0	BM	A	D	EA	N	M	U	
1510000732005E	2	20	BM	A	D	EA	N	M	U	

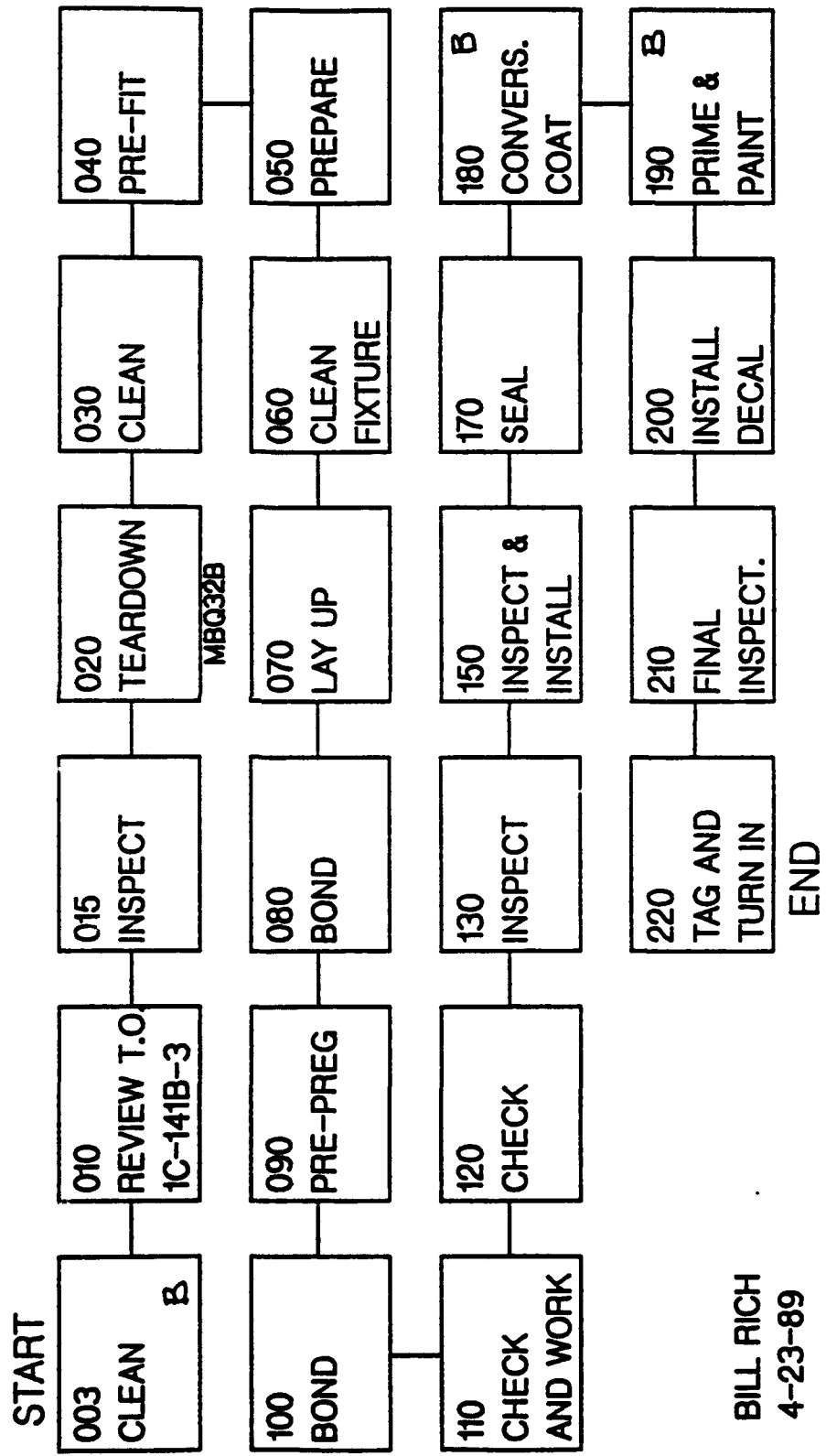
OPTION 3 - DISPLAY BOM WITH MFG PART NRS BY PDN
TO TERMINATE THIS OPTION ENTER XEIP AND SEND

PAGE

三、

MANPSA

WCD=MB032B, PCN=51418A/51419A C-141 LEADING EDGE
(WING)



AFCLC TECHNOLOGY INSERTION PROGRAM OPERATION PROFILE INSTRUCTIONS (CONTINUED)

DATA ITEM

DESCRIPTION

SOURCE

RCC

ENTER RCC NAME FOR THAT OPERATION. IF THIS RCC NAME IS NOT THE PRIMARY RCC, THE OPERATION WILL BE A BACK SHOP OPERATION. IF BACK SHOP, ENTER ONLY MANDATORY OCCURRENCE FACTOR AND MANDATORY FLOW HOURS. (6 CHARACTERS)

RCC WILL BE LISTED UNDER THE OPERATION NO. IN COLUMN 19 OF WCD.

OPERATION
DESCRIPTION

ENTER AN ABBREVIATED DESCRIPTION OF WORK BEING PERFORMED. LIMIT FOUR CHARACTERS. USE THE FOLLOWING ABBREVIATIONS AND CREATE ADDITIONAL ABBREVIATIONS AS REQUIRED.

ITEM 20 OF WCD

EVALUATE

INSTALL

ABBREVIATION

DESCRIPTION

ASSY
DIS
NDI
MOVE
PROC
REP
REPL
MFG
LOAD
UNLD
TEST
INSP
REC
SHIP
INFO
MACH
CLN
IND
SELL

ASSEMBLY
DISASSEMBLY
NON-DESTRUCTIVE INSPECTION
TRAVEL BETWEEN OPERATIONS
PROCESS OPERATION
REPAIR
REPLACE
MANUFACTURE
LOAD
UNLOAD
TEST
INSPECTION
RECEIVE OF ITEM
SHIPMENT OF ITEM
INFORMATION
MACHINING
CLEAN
INDUCTION
SELL DATE

REVIEW
WRAP
DEP
KIT
PNT
NA
WTBL
REC
TAG

REVIEW
WRAP
DEP
KIT
PNT
NAT APPLD
WEIGHT/BALANCE
RECORD
TAG/ROUTE

HEAT TREAT

HT

ROUTE

RTE

PLATE

PLT

WELD

WELD

XRAY

XRAY

TREAT

TRT

C-141 Aileron
C/N 05502A/05503A

Operation Profile

Disassembly/Assembly Profile

In/Out

Process Flow

Operation Description

NAME BILL RICH ALC WR ALC WR DATE 4-20-89 RCC MAN PSA 1 OF 1 SHEET

WCD MB017Y WCD DATE 88141											
OPERATION NUMBER	RCC	OPERATION DESCRIPTION	MANDATORY OCCUR- ANCE FACTOR	OPERATION TYPE	MANDATORY FLOW HOURS		MAINPOWER		EQUIPMENT		DATA SOURCE COMMENTS
					%	HRS.	BKILL CODE/ LEVEL	QTY.	%	HRS.		EQUIPMENT CODE	QTY.	%	HRS.
0000 IN- NPSA		REC	1.00	TRANSIT							J. DERR (G) 4161 MECHANIC J. JACKSON PLANNER (G) 3615
		↑		PROCESS	1.0			1	0.1		
		WCD OPERATIONS LISTED FROM Q10		TRANSIT							
		THRU 470. REVISED PER MARKED - UP COMPUTER COPY.		SETUP							
				PROCESS							
		BILL RICH 4-20-89		TRANSIT							
		↓		SETUP							
				PROCESS							
9999 MANPSA		SELL	1.00	TRANSIT							S. WILLIAMS SUPERVISOR (G) 4161 D. MOORE ALTERNATE J. JACKSON PLANNER
				SETUP							
				PROCESS					2.0		

C-141 ALGERIA

9:46 TUESDAY, MARCH 28, 1989 13

SAS

OPERATION PROFILE

NAME	ITEM CD	PCN	05502A	ALC	WR	WCD	MB017Y	WCD	DATE	88141	QTY	X	HRS	EQUIP	CODE	RCC	MANPSA	QTY	X	HRS	NOTES
OPER	NUMB	RCC	DESC	OPER	HIST	MAND	OPER	MAND	SKILL	CD/LVL	QTY	X	HRS	CD	CODE						
10	MANPSA	DIS					T														
10	MANPSA	DIS					1.0 S														TO BLDG 180 (MNPDD7)
10	MANPSA	DIS					P				2		12.0								
20	MANPCP	DEP					T				10.49533		0.5								BLDG 180 (WCD ???)
20	MANPCP	DEP					1.0 S														
20	MANPCP	DEP					P				60.0										
30	MANPSA	DIS					T				10.49533		0.5								BLDG 169 (WCD MBD174)
30	MANPSA	DIS					1.0 S														
30	MANPSA	DIS					P				2		8.0								
40	MANPSA	INS	P				T														
40	MANPSA	INS	P				1.0 S														
40	MANPSA	INS	P				P				2		8.0								
50	MANPSA	DIS					T														

— SEE NEXT PAGE

OPERATION PROFILE

NAME

ITEM CD PCN 05502A

ALC WR

DATE _____

WCD M8017Y WCDDATE 88141

OPER NUMB	RCC	OPER DESC	HIST OCCR	MAND OCCR	OPER TYPE	MAND F HRS	SKILL CD/LVL
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NOTES

$$\left\{ \begin{array}{l} (w \in D \wedge BA(7 \gamma)) \\ (B \in D \wedge 16q) \end{array} \right.$$

WCD MBC 17Y

9:46 TUESDAY, MARCH 28, 1989 15

SHEET 1 OF 1

NAME		OPERATION PROFILE SAS									
ITEM CD PCN 05502A		ALC WR		DATE		WCD MB017Y		WCD DATE 88141		RCC MANPSA	
OPER NUMB	RCC	OPER	HIST	MAND	OPER	MAND	SKILL	CD/LVL	QTY	%	HRS
90	MANPSA	INS	P	1.0	S	0.					
90	MANPSA	INS	P			0.	49533		2		0.5
100	MANPSA	DIS				0.					
100	MANPSA	DIS		1.0	S	0.					
100	MANPSA	DIS				0.	49533		2		4.0
110	MANPSA	ASSY				0.					
110	MANPSA	ASSY		1.0	S	0.					
110	MANPSA	ASSY				0.	47891		2		65.0
120	MANPSA	DIS				0.					
120	MANPSA	DIS		1.0	S	0.					
120	MANPSA	DIS				0.	47891		1		10.0
130	MANPCP	INS				1.0	47891		1		.5
130	MANPCP	INS		1.0	S	0.					

INSPECTOR
COMES TO
B.169 FROM
B.165 (LINE)

SAS
OPERATION PROFILE

NAME _____

NAME _____

ALC WR

DATE _____

WCD MB017Y ; WCDDATE 88141

OPER NUMB	RCC	OPER DESC	HIST OCCR	MAND OCCR	OPER TYPE
00000000	00000000	00000000	00000000	00000000	00000000

NOTES

130	MANPCP	JNSP	.	P
				0.5

140 MANPCP /NSP . 1 0

140 MANPCP /NSP 10 S 0

140	MANPCP	1/NSP	P
		0.5	

150	MANP	INSP	T	1.0	47871	1	0.5
150	MANP	INSP	T	1.0	47871	1	0.5

150 MANPSC INS¹ . 10s 0

150	MANPSC	INS ^A P	P	INS	1	18 0
150	MANPSC	INS ^A P	P	INS	1	18 0

160 MANPSC ASSY T D

160 MANPSC ASSY 10 0

160	MANPSQ	ASSY	P	47891	1	240

1170 MANPSC^A PROC . T Q

170 MANPSC PROC : /D S Q

OPERATION PROFILE										SAS	
NAME										SHEET	
ITEM CD PCN 05502A										OF	
OPER NUMB										NOTES	
OPER NUMB										RCC MANPSA	
OPER NUMB										QTY % HRS	
OPER NUMB										EQUIP CODE	
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OPER NUMB										Q	

OPERATION PROFILE SAS

SHEET ____ OF ____

NAME	ITEM CD	PCN	05502A	ALC	WR	WCD	MBD17Y	WCD	DATE	88141	QTY	%	HRS	EQUIP	CODE	QTY	%	HRS	NOTES
OPER	NUMB	RCC	DESC	OPER	HIST	MAND	OCOR	TYPE	F	MAND	SKILL	CD/LVL	%	HRS					
210	MANPSA	ASSY	.	.	P	0	49533	2	.	4.0	.	.	.	.	.	.	.	.	.
240	MANPSA	INSP	.	.	T	0	.	.	.	.	.	.	.	.	.	.	.	.	.
240	MANPSA	INSP	.	1.0	S	0	.	.	.	.	.	.	.	.	.	.	.	.	.
240	MANPSA	INSP	.	.	P	0	47891	1	.	32.0	.	.	.	.	.	.	.	.	.
250	MANPSA	INSP	.	.	T	0	.	.	.	.	.	.	.	.	.	.	.	.	.
250	MANPSA	INSP	.	1.0	S	0	.	.	.	.	.	.	.	.	.	.	.	.	.
250	MANPSA	INSP	.	.	P	0	47891	1	.	50.0	.	.	.	.	.	.	.	.	.
260	MANPSD	REF	.	.	T	0.0	17891	1	.	0.5	.	.	.	.	.	.	.	.	.
260	MANPSD	REF	.	1.0	S	0	.	.	.	.	.	.	.	.	.	.	.	.	.
260	MANPSD	REF	.	.	P	1.0	.	.	.	.	.	.	.	.	.	.	.	.	.
270	MANPSA	MOVE	.	.	T	1.0	17891	1	.	0.5	.	.	.	.	.	.	.	.	.
270	MANPSA	MOVE	.	1.0	S	0	.	.	.	.	.	.	.	.	.	.	.	.	.

WCD MBD17Y
(MANPSA3)

SHEET ____ OF ____

OPERATION PROFILE SAS

NAME	ITEM CD	PCN	05502A	OPER	HIST	MAND	OPER	MAND	ALC	WR	WCD	MB017Y	WCD	DATE	88141	QTY	%	HRS	EQUIP	CODE	QTY	%	HRS	NOTES
	270	MANPSA	MOVE	.	.	P	0.	0.	49533	1	.	1.0	.	.	.	.	.	.	.	.	.	.	.	.
	280	MANPSA	MOVE	.	.	T	0.	0.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	280	MANPSA	MOVE	.	.	1.0 S	0.	0.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	WCD MBD 17Y (MANPDAS)
	280	MANPSA	MOVE	.	.	P	0.	0.	49533	1	.	1.0	.	.	.	.	.	.	.	.	.	.	.	.
	290	MANPSA	DIS	.	.	T	0.	0.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	290	MANPSA	DIS	.	.	1.0 S	0.	0.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	290	MANPSA	DIS	.	.	P	0.	0.	49533	2	.	6.0	.	.	.	.	.	.	.	.	.	.	.	.
	300	MANPSA	INSP	.	.	T	0.	0.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	300	MANPSA	INSP	.	.	1.0 S	0.	0.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	300	MANPSA	INSP	.	.	P	0.	0.	47891	2	.	1.5	.	.	.	.	.	.	.	.	.	.	.	.
	310	MANPPC	TEST	.	.	T	1.0	1.0	47891	1	.	0.5	.	.	.	.	.	.	.	.	.	.	.	.
	310	MANPPC	TEST	.	.	1.0 S	0.	0.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	310	MANPPC	TEST	.	.	P	1.0	1.0	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

INSPECTOR FROM
BLDG 165

9:46 TUESDAY, MARCH 28, 1989 23

SHEET **OF**

OPERATION PROFILE

ALC WR DATE

WCD MB017Y ' WCDDATE 88141

OPER NUMB	RCC	OPER DESC	HIST OCCR	MAND X,CR	OPER TYPE	MAND F	HRS	SKILL CD/LVL	QTY	%	HRS	EQUIP CODE
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440 WAMPDC WTBL 10 0 0

GUY & HRS

NOTES

440 MANPDC WTBL: 10 s

440 MANPDC WBL . P 2.0

450	MANPSA	PROC	T	2.0	49533	2.2	1.0
450	MANPSA	PROC	T	2.0	49533	2.2	1.0

450 MANPSA PROC : /O S D.

	P	O.	2	.0.5
MANPSA PROC	.	0.	47891	
450				

460 MANPSA INSP . . T O.

460 MANPSA INSP . / O S D.

460	MANPSA	INSP	.	P	Q.	2	.	0.5
						47891		

470 MANPSA PROC . T Q.

470 MANPSA PROC . / O S

470	MANPSA	PROC	P	Q	47891	1	1.0
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OPERATION PROFILE

[illegible]

9:33 TUESDAY, MARCH 28, 1989 1

SAS
ASSEMBLY/DISASSEMBLY PROFILE

WCD DT INSTALL SAME NOTES
SHEET ____ OF ____
SEE PROFILE
SHEET (NEW)

RCC MANPSA

DATE

ALC WR

WCD

NAME

ITEM CODE WCD DT DSOP ASOP REMOV ITEM CODE WCD

PCN 05502A MB017V 88141 20 270 PCN 05502AD LEADINGS EKK

PCN 05502A MB017V 88141 20 270 PCN 05502AA HILFON TAB ✓

PCN 05502A MB017V 88141 20 270 PCN 05502AC BEARINGS

PCN 05502A MB030B 88064 110 120 PCN 51454AH1

PCN 51454A MB030B 88064 20 290 PCN 51454AF

PCN 51454A MB030B 88064 280 370 PCN 51454AA

PCN 51454A MB030B 88064 270 290 PCN 51454AG

PCN 51454A MB030B 88064 270 480 PCN 51454AH2

PCN 51454A MB030B 88064 270 290 PCN 51454AAB

PCN 51454A MB030B 88064 280 340 PCN 51454AI

PCN 51454A MB030B 88064 320 400 PCN 51454AJ

PCN 51454A MB030B 88064 330 430 PCN 51454AD

PCN 51454A MB030B 88064 40 500 PCN 51454AC

PCN 51454A MB030B 88064 90 460 PCN 51454AE

DISASSEMBLY/ASSEMBLY PROFILE

NAME BILL RICH ALC WR-ALC DATE 4-28-87 ROC MANPSA SHEET 1 OF 1

TOP ASSEMBLY				REMOVAL OPERATION NUMBER	INSTALLATION OPERATION NUMBER	SUBASSEMBLY				SAME REMOVED ITEM INSTALLED INTO ASST. Y/N
ITEM NUMBER	WCD	WCD DATE				ITEM NUMBER	CHILD WCD	CHILD WCD DATE		
CH 05502A	MB017Y	88141		30	270	PCN 05502A	MB017Y	88336		Y
NSN				280		NSN				
PN						PN				
CH 05502A	MB017Y	88141		50	360	PCN 05502A	MB017Y	88131		Y
NSN						NSN				
PN						PN				
CH 05502A	MB017Y	88141		80	210	PCN 05502A	MB017Y	88313		Y(.50)
NSN						NSN				
PN						PN				
PCN						PCN				
NSN						NSN				
PN						PN				
PCN						PCN				
NSN						NSN				
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LSC-20095A

PCN=05502A/05503A=

C-141 AILERON

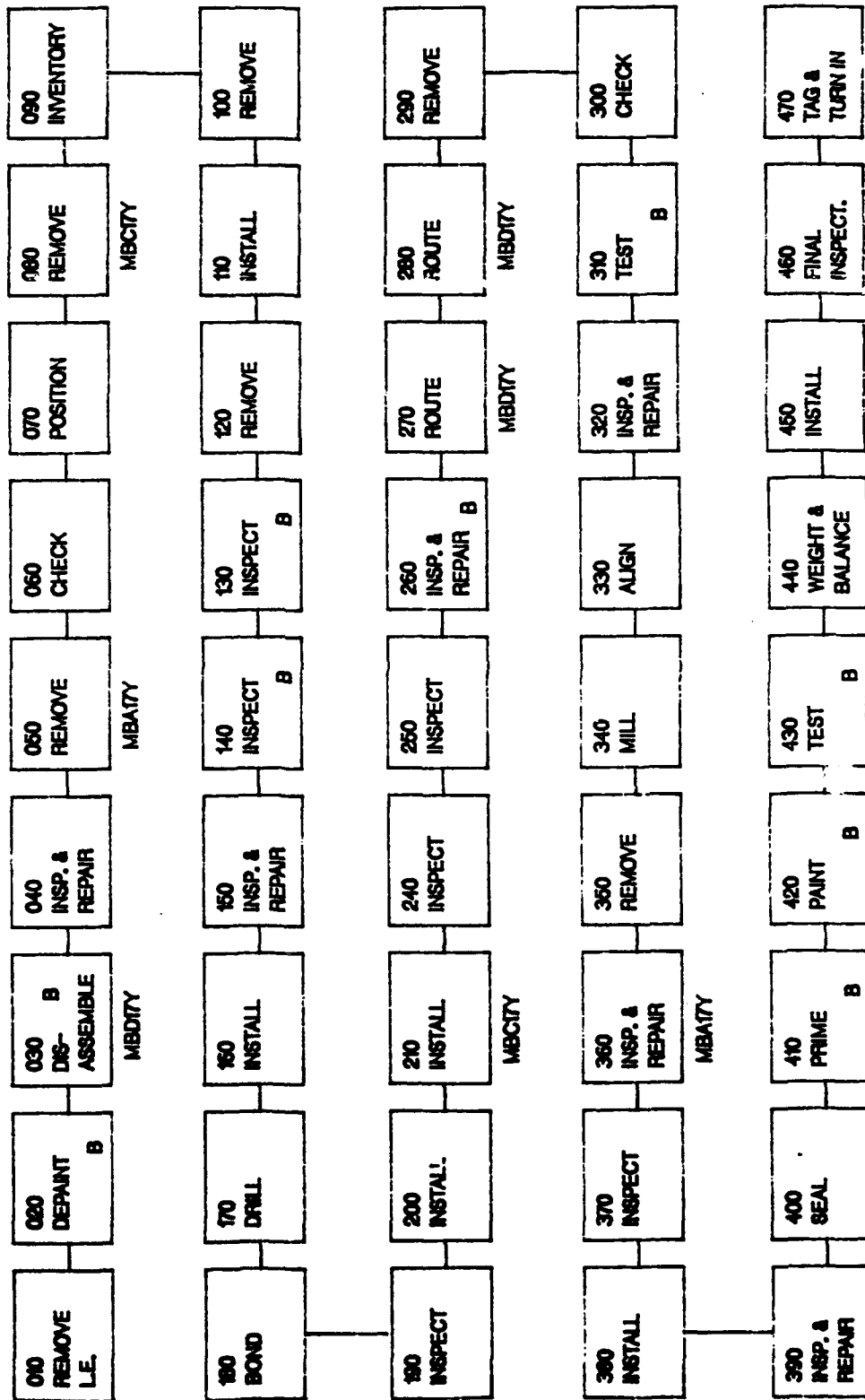
MANPSA PARENT WCD = MBO17Y (MISTR)

BILL RICH

4-20-89

[MBZ17Y (PDM)]

START



MANPSA

PARENT WCD = MBO17Y(MISTR)

BILL RICH

[MBZ17Y(PDM)]

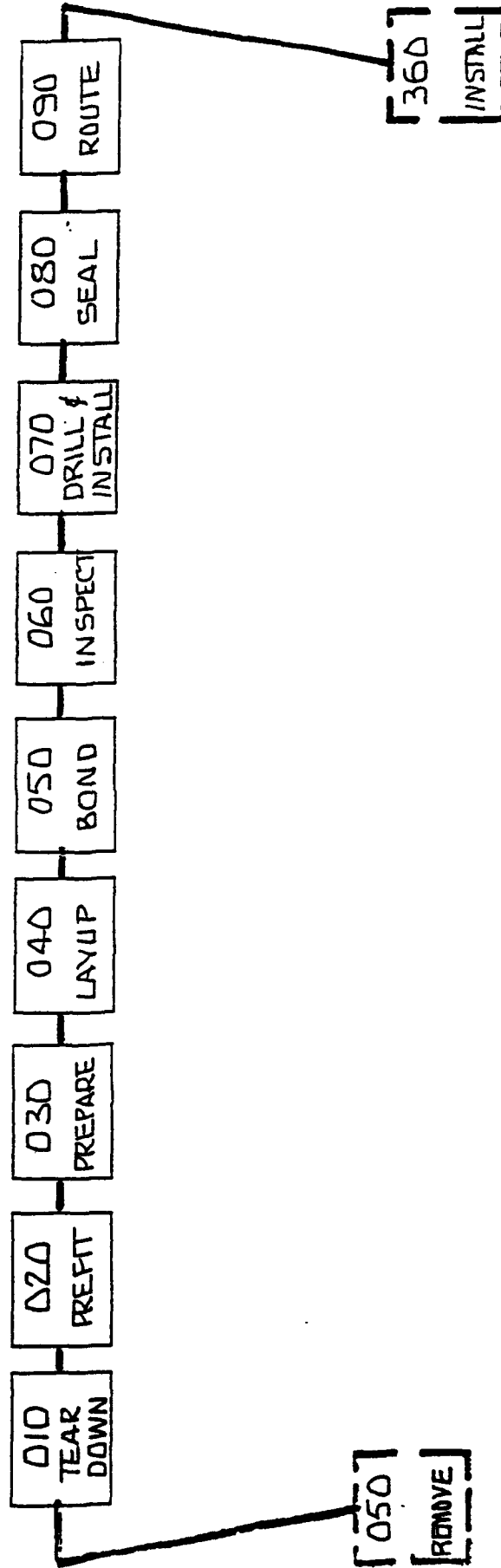
4-20-89

PCM = 05502A/05503A = C-141 AILERON

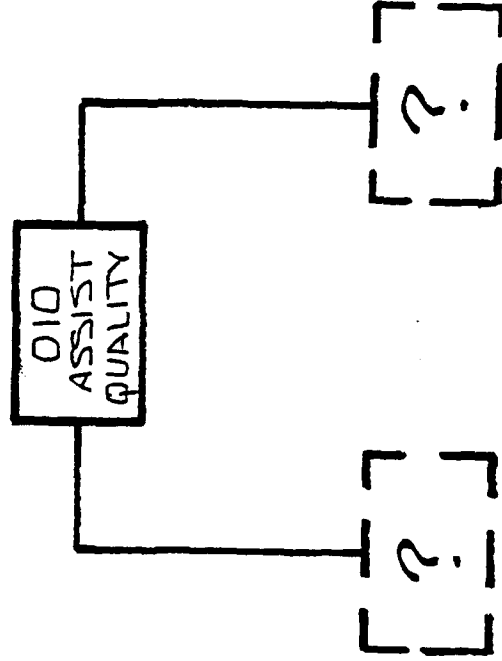
<u>OP. NO.</u>	<u>ACTION (VERB)</u>	<u>OP. NO.</u>	<u>ACTION (VERB)</u>
010	Remove L. E.	250	Inspect
020	Depaint	260	Insp. & Repair
030	Disassemble	270	Route
040	Insp. & Repair	280	Route
050	Remove	290	Remove
060	Check	300	Check
070	Position	310	Test
080	Remove	320	Insp. & Repair
090	Inventory	330	Align.
100	Remove	340	Mill
110	Install	350	Remove
120	Remove	360	Insp. & Repair
130	Inspect	370	Inspect
140	Inspect	380	Install
150	Insp. & Repair	390	Insp. & Repair
160	Install	400	Seal
170	Drill	410	Prime
180	Bond	420	Paint
190	Inspect	430	Test
200	Install	440	Weight & Bal.
210	Install	450	Install
240	Inspect	460	Final Insp.
		470	Tag & Turn In

MBA 17Y
AILERON PARTS

(BLDG 169)
(AILERON TAB)

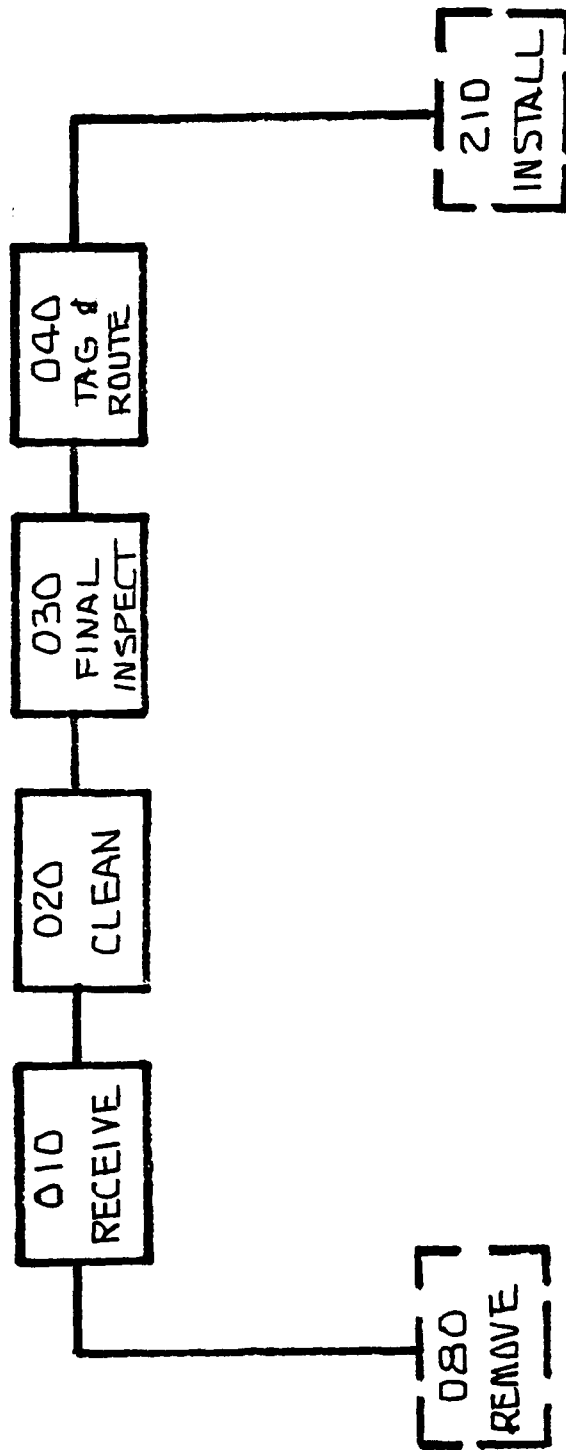


MBB17Y
AILERON (I&R)
(BLDG 169)



- INTENDED FOR MECHANIC ASSISTANCE TO QUALITY FOR DISPOSITION OF (MDR) MATERIAL DEFECENCY REPORTS. NO MDR'S HAVE BEEN ISSUED OF LATE.

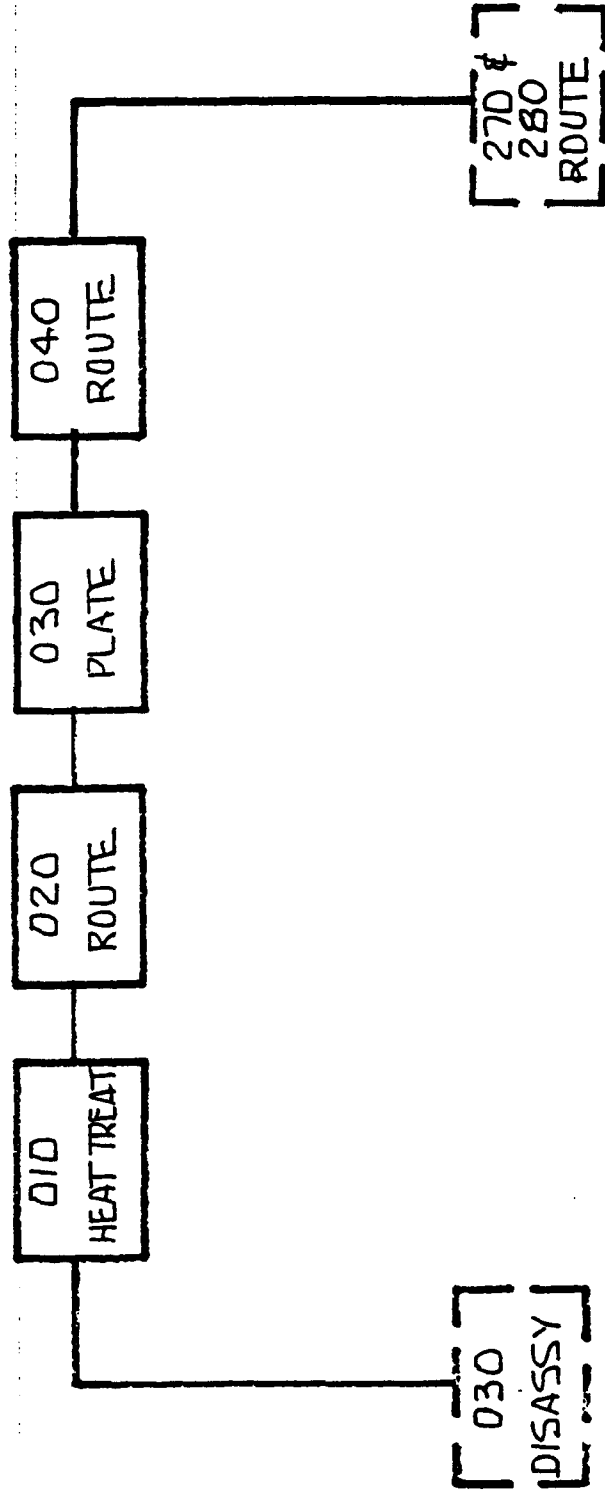
MBC 17Y
BEARINGS
(BLDG 169)



MBD 17 Y

AILERON, MISC. PARTS

(LEADING EDGE)



AFCL TECHNOLOGY INSERTION PROGRAM OPERATION PROFILE INSTRUCTIONS (CONTINUED)

PAGE 2

DATA ITEM

RCC

DESCRIPTION

ENTER RCC NAME FOR THAT OPERATION. IF THIS RCC NAME IS NOT THE PRIMARY RCC, THE OPERATION WILL BE A BACK SHOP OPERATION. IF BACK SHOP, ENTER ONLY MANDATORY OCCURRENCE FACTOR AND MANDATORY FLOW HOURS. (6 CHARACTERS)

SOURCE

RCC WILL BE LISTED UNDER THE OPERATION NO. IN COLUMN 19 OF WCD.

OPERATION
DESCRIPTION

ENTER AN ABBREVIATED DESCRIPTION OF WORK BEING PERFORMED. LIMIT FOUR CHARACTERS. USE THE FOLLOWING ABBREVIATIONS AND CREATE ADDITIONAL ABBREVIATIONS AS REQUIRED.

ABBREVIATION

ASSY
DIS
NDI
MOVE
PROC
REP
REPL
MFG
LOAD
UNLD
TEST
INSP
REC
SHIP
INFO
MACH
CLN
IND
SELL

DESCRIPTION

ASSEMBLY
DISASSEMBLY
NON-DESTRUCTIVE INSPECTION
TRAVEL BETWEEN OPERATIONS
PROCESS OPERATION
REPAIR
REPLACE
MANUFACTURE
LOAD
UNLOAD
TEST
INSPECTION
RECEIVE OF ITEM
SHIPMENT OF ITEM
INFORMATION
MACHINING
CLEAN
INDUCTION
SELL DATE

EVAL
INST

REV
WRAP
DEP
KIT
PNT
NA
WTBL
REC
TAG

HT

RTE

PLT
WELD
XRAY
TRT

ITEM 20 OF WCD

EVALUATE
INSTALL

REVIEW
WRAP

DEPAINT
KIT

PAINT

NAT APPLIED

WEIGHT/BALANCE

RECORD
TAG/ROUTE

HEAT TREAT

ROUTE

PLATE

WELD

XRAY

TREAT

C-141 Horizontal Stabilizer
C/N 51334A

Operation Profile

Disassembly/Assembly Profile

In/Out

Process Flow

Operation Description

OPERATION P FILE

NAME <u>BILL RICH</u> ALC <u>WR ALC</u> DATE <u>4-25-89</u> RCC <u>MAN PSA</u> SHEET <u>1</u> OF <u>1</u>		WCD <u>WB008B</u> WCD DATE <u>88053</u>						
OPERATION NUMBER	RCC	OPERATION DESCRIPTION	MANDATORY OCCURRENCE FACTOR	OPERATION TYPE	MANDATORY FLOW HOURS	MANPOWER	EQUIPMENT	DATA SOURCE COMMENTS
					%	QTY.	TIME REQUIRED % HRS.	
0000	MAN PSA	REC	1.00	TRANSIT				A. KNIGHT (6) 3141
				SETUP				MECHANIC
				PROCESS	1.0	1	0.1	M. NORRISON PLANNER (6) 3615
				TRANSIT				
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HOR. STAB L.E.

9:46 TUESDAY, MARCH 28, 1989 24

SAS

OPERATION PROFILE

SHEET ____ OF ____

RCC MANPSA

DATE

ALC WR

NAME

ITEM CD PCN 51334A 1

WCD MB008B 1 WCD DATE 88053

OPER NUMB RCC OPER HIST MAND OPER MAND SKILL CD/LVL QTY % HRS

10 MANPPC CLN 1.00 T 2.0 47891 1 0.5

10 MANPPC CLN 1.0 S 0

10 MANPPC CLN P 1.0

20 MANPPC TEST 1.00 T 0

20 MANPPC TEST 1.0 S 0

20 MANPPC TEST P 1.0

21 MANPPC TEST 1.00 T 0

21 MANPPC TEST 1.0 S 0

21 MANPPC TEST P 1.0

22 MANPPC TEST 0.02 T 0

22 MANPPC TEST 1.0 S 0

22 MANPPC TEST P 1.0

25 MANPPC DEP 1.00 T 2.0 47891 1 1.0

BIDG 140

BIDG 180

9:46 TUESDAY, MARCH 28, 1989 25

OPERATION PROFILE SAS

NAME	ITEM CD	PCN	51334A	ALC	WR	DATE	WCD	MB008B	WCD	DATE	88053	RCC	MANPSA	QTY	%	HRS	EQUIP	CODE	QTY	%	HRS	NOTES
25	MANPDD	DEP	10	S	0																	
25	MANPDD	DEP		P	20.0																	
30	MANPSA	PROC	1.00	T	1.0	47891	1	0.5														
30	MANPSA	PROC	1.0	S	0																	
30	MANPSA	PROC		P	0	47891	1	21.0														
40	MANPSA	REP	0.92	T	0																	
40	MANPSA	REP	1.00	S	0																	
40	MANPSA	REP		P	0	47891	1	16.0														
50	MANPSA	REP	0.92	T	0																	
50	MANPSA	REP	1.92	S	0																	
50	MANPSA	REP		P	0	47891	1	8.0														
60	MANPDB	WELD	0.77	T	1.0	47891	1	0.5														

{ BLDG 180

161

BLDG 140

OPERATION PROFILE SAS

SHEET ____ OF ____

RCC MANPSA

DATE

ALC WR

ITEM CD PCN 51334A

OPER NOMB

RCC MANPSA

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BUDG 140



OPERATION PROFILE SAS

SHEET OF

NAME			ALC WR			DATE			RCC MANPSA					
ITEM CD PCN 51334A			I WCD MR008B			WCD DATE 88053								
OPER NUMB	RCC	OPER DESC	HIST MAND	OPER TYPE	MAND F	HRS	SKILL CD/LVL	QTY	%	HRS	EQUIP CODE	QTY	%	HRS
90	MANPSA	REP	.	P	20.0	47891	1	0.3			1190	1		
120	MANPSA	REP	1.00	T	0.									
120	MANPSA	REP	1.0	S	0.									
120	MANPSA	REP	.	P	0.	47891	1	8.0						
								1.0						
130	MANPSA	REP	1.00	T	0.									
130	MANPSA	REP	1.0	S	0.									
130	MANPSA	REP	.	P	0.	47891	1	8.0						
								2.5						
140	MANPSA	INS	1.00	T	0.									
140	MANPSA	INS	1.0	S	0.									
140	MANPSA	INS	.	P	0.	47891	1	0.3						
150	MANPPC	/NS	1.00	T	1.0	47891	1	0.5						
150	MANPPC	/NS	1.0	S	0.									

{ BUDG 140

OPERATION PROFILE SAS

SHEET ____ OF ____

NAME	ITEM CD	PCN	51334A	ALC	WR	DATE	WCDDATE	88053	QTY	%	HRS	EQUIP	CODE	QTY	%	HRS
OPER	RCC	MANPPC	OPER	HIST	MAND	OPER	MAND	TYPE	SKILL	CD/LVL	QTY	%	HRS			
150	MANPPC	INDSP	P	2.0												
155	MANPPC	PRoc	T	2.0												
155	MANPPC	PRoc	S	0.												
155	MANPPC	PRoc	P	2.0												
160	MANPPC	TEST	T	0.												
160	MANPPC	TEST	S	0.												
160	MANPPC	TEST	P	8.0												
170	MANPPC	TEST	T	0.												
170	MANPPC	TEST	S	0.												
170	MANPPC	TEST	P	0.												
180	MANPPC	TEST	T	0.												
180	MANPPC	TEST	S	0.												
180	MANPPC	TEST	P	0.												

BLDG
140

SHEET 1 OF 13

NAME

ITEM CD PCN 51334A

SAS
OPERATION PROFILE

ALC WR

DATE _____

WCD MB008B WCD DATE 88053

OPER NUMR	BCC	OPER DESC	HIST OCCR	MAND OCCR	OPER TYPE
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[illegible]

QTY	%	HRS
1	100	1

EQUIP
CODE

NOTES

RCC MANPSA

QTY	%	HRS
1	100	1

180
B.L.D.G.

200 MANPDC ρ_{NT} 1.00 . T

200 MANPDC PNT 1.0 s

200 MANPDC *PNF* . . P

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210 MANPSA .PROC 1.00 . T
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210 MANPSA PROC . / .0 S

210 MANPSA PROC . . P

220 MANPSA INS 1.00 . T

220 MANPSA INS . /D.

220 MANPSA INS . .

230 MANPSA PROC 1.00 .

230 MANPSA PROC 10.

230 MANPSA PROC . .

DISASSEMBLY/ASSEMBLY LE C-141 HOR. STAB. L.E.

NAME BILL RICH ALC WR-ALC DATE 4-28-89 RCG MANPSA SHEET 1 OF 1

TOP ASSEMBLY			REMOVAL OPERATION NUMBER	INSTALLATION OPERATION NUMBER	SUBASSEMBLY			SAME REMOVED ITEM INSTALLED INTO ASBY. Y/N
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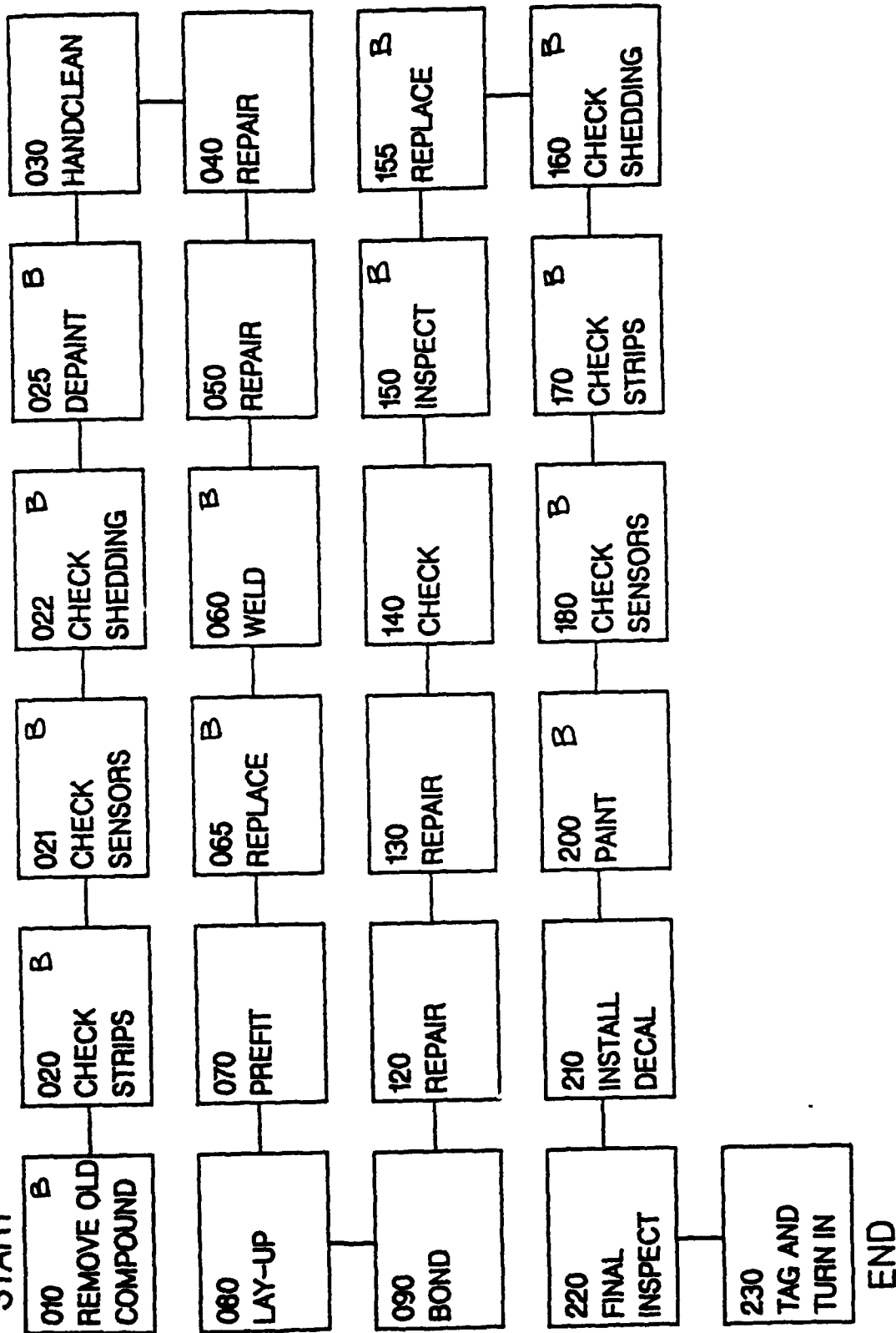
WCD=MB008B, PCN=51334A, C-141 LEADING EDGE
(HOR. STAB.)

MANPSA

BILL RICH

4-22-89

START



AFLC TECHNOLOGY INSERTION PROGRAM OPERATION PROFILE INSTRUCTIONS (CONTINUED)

DATA ITEM	DESCRIPTION	SOURCE																																																																						
RCC	ENTER RCC NAME FOR THAT OPERATION. IF THIS RCC NAME IS NOT THE PRIMARY RCC, THE OPERATION WILL BE A BACK SHOP OPERATION. IF BACK SHOP, ENTER ONLY MANDATORY OCCURRENCE FACTOR AND MANDATORY FLOW HOURS. (6 CHARACTERS)	RCC WILL BE LISTED UNDER THE OPERATION NO. IN COLUMN 19 OF WCD.																																																																						
OPERATION DESCRIPTION	ENTER AN ABBREVIATED DESCRIPTION OF WORK BEING PERFORMED. LIMIT FOUR CHARACTERS. USE THE FOLLOWING ABBREVIATIONS AND <u>CREATE</u> ADDITIONAL ABBREVIATIONS AS REQUIRED.	ITEM 20 OF WCD																																																																						
	<table border="0"> <tr> <td>ABBREVIATION</td><td>DESCRIPTION</td></tr> <tr> <td>ASSY</td><td>ASSEMBLY</td></tr> <tr> <td>DIS</td><td>DISASSEMBLY</td></tr> <tr> <td>NDI</td><td>NON-DESTRUCTIVE INSPECTION</td></tr> <tr> <td>MOVE</td><td>TRAVEL BETWEEN OPERATIONS</td></tr> <tr> <td>PROC</td><td>PROCESS OPERATION</td></tr> <tr> <td>REP</td><td>REPAIR</td></tr> <tr> <td>REPL</td><td>REPLACE</td></tr> <tr> <td>MFG</td><td>MANUFACTURE</td></tr> <tr> <td>LOAD</td><td>LOAD</td></tr> <tr> <td>UNLD</td><td>UNLOAD</td></tr> <tr> <td>TEST</td><td>TEST</td></tr> <tr> <td>INSP</td><td>INSPECTION</td></tr> <tr> <td>REC</td><td>RECEIVE OF ITEM</td></tr> <tr> <td>SHIP</td><td>SHIPMENT OF ITEM</td></tr> <tr> <td>INFO</td><td>INFORMATION</td></tr> <tr> <td>MACH</td><td>MACHINING</td></tr> <tr> <td>CLN</td><td>CLEAN</td></tr> <tr> <td>IND</td><td>INDUCTION</td></tr> <tr> <td>SELL</td><td>SELL DATE</td></tr> </table>	ABBREVIATION	DESCRIPTION	ASSY	ASSEMBLY	DIS	DISASSEMBLY	NDI	NON-DESTRUCTIVE INSPECTION	MOVE	TRAVEL BETWEEN OPERATIONS	PROC	PROCESS OPERATION	REP	REPAIR	REPL	REPLACE	MFG	MANUFACTURE	LOAD	LOAD	UNLD	UNLOAD	TEST	TEST	INSP	INSPECTION	REC	RECEIVE OF ITEM	SHIP	SHIPMENT OF ITEM	INFO	INFORMATION	MACH	MACHINING	CLN	CLEAN	IND	INDUCTION	SELL	SELL DATE	<table border="0"> <tr> <td>EVALUATE</td><td>REVIEW</td></tr> <tr> <td>INSTALL</td><td>WRAP</td></tr> <tr> <td></td><td>DEPAINT</td></tr> <tr> <td></td><td>KIT</td></tr> <tr> <td></td><td>PAINT</td></tr> <tr> <td></td><td>NOT APPLIED</td></tr> <tr> <td></td><td>WEIGHT/STANDARD</td></tr> <tr> <td></td><td>RECORD</td></tr> <tr> <td></td><td>TAG/ROUTE</td></tr> <tr> <td></td><td>HEAT TREAT</td></tr> <tr> <td></td><td>ROUTE</td></tr> <tr> <td></td><td>PLATE</td></tr> <tr> <td></td><td>WELD</td></tr> <tr> <td></td><td>XRAY</td></tr> <tr> <td></td><td>TREAT</td></tr> </table>	EVALUATE	REVIEW	INSTALL	WRAP		DEPAINT		KIT		PAINT		NOT APPLIED		WEIGHT/STANDARD		RECORD		TAG/ROUTE		HEAT TREAT		ROUTE		PLATE		WELD		XRAY		TREAT
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5.1 PROFILE DATA FILES

The profile data files for RCC MANPSA were previously submitted under memo number NKE-E016-7603, dated July 6, 1989.

5.2 MODEL INPUT FILES

The model input files for RCC MANPSA were previously submitted under memo number NKE-E016-7603, dated July 6, 1989.

6.0 VALIDATION OF INPUT DATA

All profile data was validated in accordance with paragraph 7.2 and 7.3 of the Simulation Model Definition Document (SMDD). The profile data files included in this document were validated and accurately represent this RCC.

**MINUTES OF
MODEL VALIDATION MEETING
June 19 thru June 23, 1989**

WR-ALC/MDMSC

6-29-89

WR-ALC MODEL VALIDATION
MEETING MINUTES

19 June 89:

- . Jim Gillis started the meeting by introducing team members:

- . Jim Gillis
- . Gerald Peavy
- . Doug Keene
- . Lott Singletary

AFLC Representative:

- . Trixie Brown

MDMSC Representatives:

- . Bob Bashyan
- . Bill Rich
- . Roger VanderVoord
- . Scott Vroman

- . Jim pointed out that AFLC instructed them not to sign off the Model Validation Form.
- . Reviewed model output for RCC MANPSA. Evaluated throughput, historical flow hours vs. simulated flow hours, expected hours vs. standard hours.
- . This evaluation was performed for each item number. During this process list of major assumptions, action items and concerns were noted.

PCN 01900A: F-15 Speed Brake

- . Historical flow hours 933.5 vs. 466.70 of simulated flow hours.

Assumption:

Method of induction may be a problem. History does reflect 500 hours to complete first operation which is inspection.

Historical backshop hours were greater than simulated hours. We decided to input backshop hours back into the model.

WR-ALC
Model Validation Meeting Minutes
Page Two

PCN 01900A: F-15 Speed Brake (continued)

. Action items:

Doug to verify the manpower utilization.
Bill to review expected and standard hours.

PCN 05502A: C-141 Aileron

- . Simulated throughput 13.2% difference. The difference was due to sporadic induction method.

PCN 51334A: C-141 Leading Edge Horizontal Stabilizer

- . Bill to review expected hours.
- . Increase backshop hours by 180 hours based on historical report.

PCN 51352A: C-141 Access Door

- . Bill to review expected hours.
- . Increase backshop hours based on historical report.

PCN 51418A: C-141 Leading Edge Wing

- . Bill to verify expected hours.

PCN 51454A: C-141 Petal Door

- . Bill to review the subassembly process hours.
- . History had one sample of 698 days - adjusted for this odd occurrence and made hours from 2288 to 1334.

- . This completes the evaluation of model output for RCC MANPSA. At the end of this evaluation, Bob summarized the action items and assumptions. Jim commented that the model

WR-ALC
Model Validation Meeting Minutes
Page Three

seems to be doing what it is suppose to and asked MDMSC team to complete the action item and re-run the output. Jim also stated that either expected or standard hours can be used in establishing baseline of model based on IE's judgment. AFLC's representative, Trixie Brown, disagreed with Jim's comment. Validation team decided that during evaluation of difference between historical vs. simulation, 10% should be used only as a guideline not as a measurement.

Evaluation of RCC MANPGC:

- . Evaluated the model output for the following PCNs: 06121A, 74061A, 74063A, 74146A, 74148A and 74149A.
- . Review of throughput, historical vs. simulated flow hours and expected vs. standard hours revealed the following:
 - . Expected vs. standard hours were within acceptable range.
 - . Throughput was good.
 - . Flow hours showed lot of difference between simulation and history. Review of historical report revealed that an unique pattern of process is being followed in Gyro Shop. Gyros after inspection were stored/held for long period of time before the start of repair operation.
 - . Discussed about this problem. Doug and Jim wanted to have some methodology to show the unique holding process.

20 June 89:

- . Bruce Kirk of MDMSC joined us to facilitate our brainstorming effort.
- . Conducted brainstorming effort at Building 169. Morning session for Sheet Metal RCC's MANPSA, MANPSB, MANPSC, and MANPSD and afternoon for Gyro RCC's MANPGA, MANPGB, and MANPGC.

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Model Validation Meeting Minutes
Page Four

- . Due to the nature of process and similarity we decided to have one brainstorming effort for Sheet Metal (4 RCCs) and one for Gyro (3 RCCs).
- . Doug arranged both the sessions by bringing in representatives from manufacturing, scheduling, planning and quality.
- . Both the sessions went out very good with a lot of participation. Developed fish bone - details of fish bone and brainstorming activities are covered in minutes of model validation/brainstorming.

21 June 89:

- . Evaluated the model output for all the RCCs MANPSA, MANPSB, MANPSC, MANPSD, MANPGA, MANPGB, and MANPGC.
- . Redlined the backshop hours and added buffer operations as requested by ALC for Gyro RCCs.
- . Input all the changes and re-run the model.
- . Dick Donnelly and Lou Mavros joined us to support our model validation effort.
- . Dick, Lou, Bob and Gerald had an opportunity to meet Mr. Clinton Lewis. Discussed about the validity of model and about future task orders.
- . Jim Gillis will be on vacation for the rest of the week.

22 June 89:

- . Evaluated the re-run of model output after inputting the redlined corrections.

6-29-89

MANPSA

01900A: F-15 Speed Brake

- . Expected vs. standard hours is acceptable.
- . Historical vs. simulated flow hours - still have a problem. History shows operation 10 takes about 500 hours to complete. This is due to induction and priority problem. Operation 40 shows 68 hours to complete (waiting for engineer) whereas model shows 1 hour. One hours represents process hour whereas 68 hours includes waiting time also.

05502A: C-141 Aileron

- . This a PDM item. No historical data available. Evaluated the output and verified with mechanics and planners to validate the model output.

051334A: C-141 Leading Edge Horizontal Stabilizer

- . Standard vs. expected hours is within acceptable range.
- . Backshop hours were off. Redlined the output.

51454A: C-141 Petal Door

- . Model output does seem to represent as-is condition.

51352A: C-141 Access Door

- . Redlined backshop hours to represent historical data.

MANPSD

09193A: F-15 Radome

- . Expected vs. standard hours is within acceptable range.

WR-ALC
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Page Six

- . Simulated flow hours are almost double the historical. Review showed us operation 190 takes about 550 hours to complete.
- . Operation 190 is repair operation performed by one mechanic for about 50 hours. Model shows the manpower availability as a problem.
- . Doug pointed out that the model exaggerates the problem.

41059A: C-130 Radome Assembly

- . Model output does seem to represent the as-is condition.
- . Needed to verify the historical data of 500 hours for operation 10.

51420A: C-141 Wing Leading Edge

- . Evaluated the output and redlined backshop hours.

40208A: C-130 Radome

- . Output does seem to represent the as-is condition except the historical hours for Operation 30.
- . History shows that it takes over 4000 hours to complete Operation 30.
- . Bob to check the historical input data at St. Louis, if available and respond to WR-ALC.

03172A: F-15A Canopy

- . Evaluated model output. History shows that it takes approximately 1180 hours to complete Operation 10.
- . Operation 10 is to inspect and determine what parts are required to perform the repair. It does wait for a long time in getting those required parts.

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WR-ALC
Model Validation Meeting Minutes
Page Seven

MANPSE

- . This is a manufacturing RCC.
- . No historical data for analysis. Reviewed only the throughput.
- . Model output was validated based on it's performance on the other 6 RCCs.

MANPG

- . Evaluated the re-run of model out for RCCs MANPGA, MANPGB and MANPGC.
- . Output for these RCCs were reviewed earlier. Buffer operation were added where necessary to represent historical data.
- . Output for PCNs 74010A, 74074A, 74163A, 74126A, 74051A, 20012A, 06121A, 74061A, 74063A, 74146A, 74148A, and 74149A from all the three RCCs were individually evaluated.
- . Flow hours, process hours and throughput were within acceptable range. Model does represent the as-is condition.
- . Doug and Lott questioned the validity of historical data for PCNs 74074A and 20012A. Wanted to verify with manufacturing personnel.

23 June 89:

- . Doug and Lott verified and confirmed the flow hour information.
- . Reviewed the re-runs of model output.
- . Bob compiled the meeting of minutes and reviewed with team members.

6-29-89

WR-ALC
Model Validation Meeting Minutes
Page Eight

- WR-ALC/AFLC/MDMSC validation team agrees that the model seems to represent the approximation of as-is condition of RCCs MANPSA, MANPSB, MANPSC, MANPSD, MANPGA, MANPGB and MANPGC; therefore, the model can be used as a baseline for experimentation.

Doug Keene, WR-ALC/MANEE

Lott Singletary, WR-ALC/MANEE

Jim Gillis, WR-ALC/MAWF

Gerald Peavy, WR-ALC/MAWF

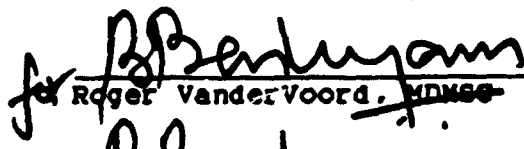
Trixie Brown, AFLC/MAQF



Scott Vroman, MDMSC



Bill Rich, MDMSC



for Roger VanderVoord, MDMSC



Bob Bashyan, MDMSC

7.0 COMPUTER SIMULATION ANALYSIS OF RCC

The computer simulation analysis for RCC MANPSA was previously submitted under memo number NKE-E016-7603, dated July 6, 1989.

8.0 VALIDATION OF SIMULATION ANALYSIS

The validation of simulation analysis for RCC MANPSA was previously submitted under memo number NKE-E016-7603, dated July 6, 1989.

9.0 BRAINSTORMING

The minutes for RCC MANPSA brainstorming were previously submitted under memo number NKE-E016-7603, dated July 6, 1989.

**MINUTES OF
BRAINSTORMING SESSIONS**

June 20, 1989

WR-ALC/MDMSC

**MINUTES OF BRAINSTORMING
SESSION FOR FOUR SHEET METAL RCCs
- June 20, 1989 Morning Session -**

Jim Gillis started the brainstorming session by introducing the facilitator Bruce Kirk of MDMSC. The following were in attendance for this session:

Bashyam, Bob	MDMSC
Gillis, Jim	WR-ALC/MAWF
Jackson, John	WR-ALC/MANERS
Keene, Doug	WR-ALC/MANEE
Kirk, Bruce	MDMSC
Kittrell, Don	WR-ALC/MANSCA
Morrison, Michael	WR-ALC/MANERS
Nicholson, Richard	WR-ALC/MANERS
Powell, David	WR-ALC/MANPSA
Rich, Bill	MDMSC
Singletery, Lott	WR-ALC/MANEE
VanderVoord, Roger	MDMSC
Warnock, Kevin	WR-ALC/MANEE
Williams, Sam	WR-ALC/MANPSA

Bruce Kirk being the facilitator briefed to participant the process of brainstorming. Bruce emphasized flow time is the quality characteristic that we are trying to improve or minimize. With that round robin solution presentation process started. Following are the suggestions:

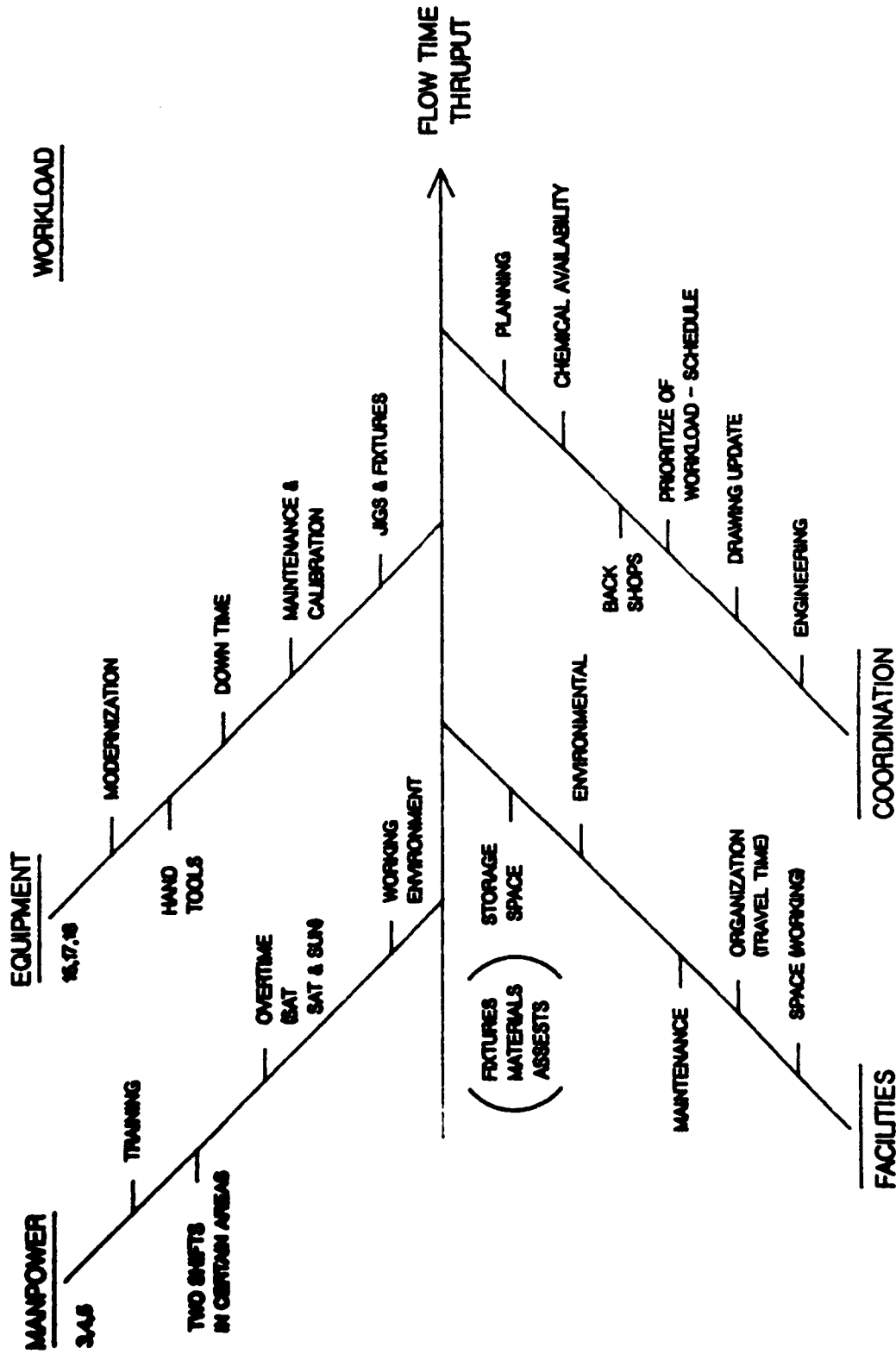
1. Time in Wet Clean (Back Shop).
2. Prioritize of workload (F-15 first).
 - a. May stop in middle of repair to respond.
 - b. Demand system.
3. Manpower.
4. Training shop - mechanics get transferred to F-15 Shop.

**Minutes of Brainstorming Session
June 20, 1989 Morning Session
Page Two**

5. Two shifts in certain shops.
6. Lack of space and environmental control.
7. No storage space for fixtures etc.
8. Chemical availability - anodize, etc.
9. Hand tools - proper matching to job. Prompt replacement of broken tools. Resizing the tool box may improve space.
10. Workload - need better forecasting.
11. RCC MANPSB completes then ships to storage - delay 10 to 15 days to get the same part back in finishing the repair.
12. Major repair coordination with Engineering - delays.
13. Update drawings requires 60 days.
14. Expedite travel of prioritize parts.
15. Space organization.
16. Equipment modernization.
17. Equipment preventive maintenance and calibration.
18. Jigs and fixtures - modify to ease use without removal. Work stand - better accessibility.

DEVELOPED FISHBONE (CAUSE AND EFFECT) DIAGRAM.

SHEET METAL SHOP FISHBONE - CAUSE & EFFECT DIAGRAM



Ref: MONTANA

EXPERIMENTATION ANALYSIS AFTER BLOCK I SUBMITAL

AS PER WR-ALC TEAM REQUEST THE FOLLOWING ACTION TOOK PLACE TO CLARIFY THE FOCUS STUDY ON C-141 AILERON FIXTURE.

- REVIEWED THE INPUT FILE AND FOUND EQUIPMENT QUANTITY FOR C-141 WERE USED ONLY FOR LEFT SIDE AILERON ONLY. WORKLOAD WERE BOTH LEFT AND RIGHT AILERON. IN OTHER WORDS THE RUNS WERE EXECUTED FOR BOTH LEFT AND RIGHT AILERON USING ONLY LEFT FIXTURE. VERIFIED THIS WITH WR-ALC TEAM AND THEY CONCURRED TO MY FINDINGS.
- EXECUTED THREE RUNS WITH BOTH LEFT AND RIGHT FIXTURE WITH BASE, BASE+, AND BASE++ FACTORS. (REF: EXP. NO. 3 OF TABLE X) REVIEW OF THE OUTPUT SHOWED A GOOD TREND FOR AILERON. AT BASE+ CONDITION THROUGHPUT INCREASED FROM 8 TO 17 AND AT BASE++ THE QTY. WENT FROM 38 TO 80. ALSO COMPILED THE FLOW CHRS

DURING [REDACTED] 1635 HRS. IN BASE FIX
CONDITION.

- THREE OTHER RUNS (REF EXP. NO. 2) WERE PROCESSED WITH LEFT AILERON FIXTURE ONLY, BY CONTROLLING WORK IN PROCESS TO QTY.

RESULTS WERE NOT WHAT WE ANTICIPATED. BOTTLENECK WAS MOVED AND SHOWED PROBLEM IN MEETING THROUGHPUT EVEN AT AS IS CONDITION DROPPED THIS IDEA AND THANKED THE CAPABILITY OF SIMULATION MODEL.

- REVIEWED THE PSEUDO WCD WHICH WAS DEVELOPED AT WR-ALC. AS PER THIS PSEUDO WCD THE AILERON (PEN 05502A) WAS REPAIRED BY MOUNTING ON FIXTURE FROM OPERATION 100 TO OPERATION 400. Due to Queing up problem Revised the PSEUDO WCD AND EXECUTED THREE MORE RUNS.

RESULTS SHOW THAT THERE IS A TREND OF INCREASE IN THROUGHPUT WHEN QTY OF FIXT IS CHANGED AND WITH A REVISED WCD.

AND WERE NOT PROCESSED
MANPOWER ALL IN FIRST SHIFT FOR
A COMPARISON PURPOSE.

COMPARISON OF THESE THREE RUNS
SHOW THAT : a) THROUGHOUT CAN BE
ACCOMPLISHED AT AS-IS (BASE) CONDITION,
b) BUT BASE + AND BASE ++ COULD
PROVIDE QUALITY END ITEM CONSISTENTLY
AT LESS COST.

- RAN ONE RUN WITH SURGE FACTOR.
IT SHOWS THIS ALL MANPSA WILL
HAVE PROBLEM IN MEETING SURGE.
ALLOCATION OF ^{ADEQUATE} WGT TO RETAL
ADDR UNLESS COULD HELP TO
MEET SURGE REQUIREMENT

- TABL X -

MANPSA

WE-ALC

EXM NO.	DESCRIPTION	RCC	THROUGHPUT NO: 514	05502 AILERON THROUGHPUT
1.	1 ST EXPERIMENTATION RESULTS	R1 528	R2 446	R3 480
2.	WITH WIP-2 CHG. QTY OF FIXTURE.	429	450	459
3.	CHG. QTY. OF FIXTURE ONLY	522	453	521
4.	CHANGE PRESS. CHG. QTY OF GRIP. DELETE WK-END RUN-3.	522	466	517

STORAGE - BASE 1099 INDUCTION 1215.

NOTE: (ASSUMPTIONS FOR EXP NO 1, 2 & 3 ONLY)

R1 = BASE = AS IS CONDITION = (EXP NO 1) USED 1 LH FIXT FOR AILERON

R2 = BASE + = PSEUDO WCD = AILERON FIXTURE QTY FOR: EXP NO #1 = 1, EXP NO 2

R3 = BASE + + = PSEUDO WCD = AILERON FIXTURE QTY FOR: EXP NO #1 = 3, EXP NO 2

EXP NO. 4.

R1 = BASE = ALL MP IN 1ST SHIFT = AS IS CONDITION

R2 = BASE + = ALL MP IN 1ST SHIFT = REVISED PSEUDO WCD = AILERON

R3 = BASE + + = ALL MP IN 1ST SHIFT = REVISED PSEUDO WCD = AILERON

2. PSSD/RCC 3. MATERIAL

MPSAC

9. MODEL/DESIGN/SERIES 10. NOUN

AILERON

12. BCN 12A. SER NO.

13. TECH DATA/OPTIONAL

1-1-2, 1C-141B-3, 1-1A-8

1C-141B-36, 1C-141B-23

1C-141B-4, 1-1-8, 3W39022

14. PART NUMBER 15. STOCK NR. 16. PDN 17. BCN

8130281-10 1560011287501 JH 05502A 806445

8130281-20 1560011287502 JH 05503A 806446

18. DISF-19. PDN/

STATION/OP NO.

20. WORK TO BE ACCOMPLISHED

21. MECH 22. P 23. Q

169

010

MNPSA

REMOVE HONEYCOMB LEADING EDGES & TAB. ROUTE AILERON & COMPONENTS TO MNPDD7 (BLDG. 180)

B

20.

180

020

MNPDD7

REPAINT/CLEAN/TREAT CORROSION IAW T.O. 1-1-2, SECTION VI

.5

169

030

MNPSA

DISASSEMBLE DAMAGED LEADING EDGES; INSPECT AND REPAIR PER SUPPLEMENTAL WCD MBA17Y

12.5

169

040

MNPSA

INSPECT/REPAIR DAMAGED LEADING EDGE SHROUDS.

12.

169

050

MNPSA

REMOVE/INSPECT/REPAIR AILERON TAB PER SUPPLEMENTAL WCD MBA17Y.

12.

169

060

MNPSA

POSITION AILERON ON 3 WORK TABLES AND MAKE HINGE ALIGNMENT CHECK USING BAR CHECK FIXTURE. RECORD FINDINGS

4.

169

070

MNPSA

REMOVE CHECK FIXTURE.

2

169

080

MNPSA

REMOVE AND ROUTE BEARINGS WITH SUPPLEMENTAL WCD MBA17Y

6

6

WORK CONTROL

8.DISP-19.PDN/
TATION/OP NO. 120.MNPSA

169	090	PRIOR TO CLOSURE, INSPECT AREA FOR FOD. INVENTORY LIST/FILE OF MATERIALS			11.0
169	100	REMOVE BOTTOM SKIN, P/N 3W3400 8-124 (R/H) OR 3W3400 8-123 (L/H). NOTE: OLD SKIN WILL BE USED AS A DRILL TEMPLATE. SALVAGE DOOR CUT OUT DOUBLER, P/N 3W34920.			10.
169	110	INSTALL NEW FITTINGS AND RIB CAPS IAW DRAWING 3W39022. (REPAIR/REPLACE RIB WEBS IF NEEDED).	B		50. 40.
169	120	REMOVE LOWER BEAM CAP (SPAR) AND SPLICE ANGLES/DOUBLERS.	B		10.
169	130	CONDUCT EDDY CURRENT SURFACE SCAN OF SALVAGED LOWER BEAM CAP SPLICE AREA PER DETAIL #31 OF DRAWING 3W3922. RECORD FINDINGS	K		0.5
169	140	CONDUCT BOLT HOLE EDDY CURRENT INSPECTION OF INDICATED HINGE FITTING ATTACH HOLES THRU WEB AND UPPER BEAM CAP PER DETAIL	K		0.5
169	150	VISUAL INSPECT AILERON MAIN BEAM WEB FOR DAMAGE AND CORROSION. REPAIR/REPLACE AS NEEDED.	B		14.
169	160	INSTALL NEW LOWER BEAM CAP AND SPLICE ANGLES/DOUBLERS.	B		20.
169	170	DRILL NEW SKIN USING OLD SKIN AS PATTERN. MAKE ALL CUT OUTS PER DRAWING 3W39022.			14.
169	180	BOND SHIM TO HINGE PLATE ATTACH POINT.			4.
169	190	PRIOR TO CLOSURE, INSPECT AREA FOR FOD.	B		1.
169	200	INSTALL NEW SKIN, DOUBLERS, AND DOORS.	B		20.
169	210	INSTALL BEARINGS.			8.

WORK CONTROL

19.DISP-19.PDN/
ATION/OP NO.

169	240 MNPSA	VISUAL INSPECT/REPAIR ASSY.					24.0
169	250 MNPSA	VISUAL INSPECT/REPAIR STRUCTURAL DAMAGE IAW T.O. 1C-141B-3, SECTION II			B		40.0 50.0 30.0
169	260 MNPSDP	INSPECT/REPAIR FIBERGLASS TRAILING EDGE IAW T.O. 1-1-14 AND T.O. 1C-141B-3.			B		0.5
169	270 MNPSA	ROUTE MISC PARTS TO MNPDJ FOR HEAT TREAT., IAW SUPPLEMENT SHEET MBD17Y					0.5
169	280 MNPSA	ROUTE MISC PARTS TO MNPDJ FOR PLATING. IAW SUPPLEMENT SHEET MBD17Y.					1.0
169	290 MNPSA	REMOVE STATIC DISCHARGES. CHECK FOR CORROSION. REPAIR OR REPLACE IAW T.O. 1C-141B-3 AND T.O. 1C-141B-2-2JG-3-2. NOTE: USE ADHESIVE 8030011186251 (PROSEAL 872). CURE AS REQUIRED. SEAL STATIC DISCHARGES WITH MIL-S81733 SEALANT.			B		12.0
169	300 MNPSA	CHECK HYDRAULIC HOSES AND REPLACE IF NECESSARY IAW T.O. 42E 1-1-1.			B		2.0
169	310 MNPPCD	PERFORM ELECTRICAL RESISTANCE CHECK ON EACH STATIC DISCHARGER RETAINER. REF. T.O. 1C-141B-2-2JG-3-2 AND LAC PROCESS SPEC. 2058.			B		0.5
169	320 MNPSA	INSPECT/REPAIR/REPLACE DAMAGED UPPER SPAR SHROUDS.					2.5
169	330 MNPSA	INSPECT AILERON IN FIXTURE PRIOR TO FINAL ALIGNMENT CHECK					2.0
169	340 MNPSA	MILL SHIM.	1.00	2.00	B		2.0
169	350 MNPSA	INSPECT TAB HINGES PRIOR TO TAB INSTALLATION USING BAR CHECK FIXTURE.	3.0 IC 2.0	3.0 SC 0.5			2.0
169	360 MNPSA	INSPECT/REPAIR TAB BOOT. INSTALL TAB ON AILERON.	3.5	4.0	B		10.0
169	370 MNPSA	PRIOR TO INSTALLING LEADING EDGES, INSPECT AILERON INTERIOR FOR FOD.	1.0	2.0	B		1.0

103 #3 #4

9.DISP-19.PDN/

ATION/OP NO. 20.WORK TO BE ACCOMPLISHED

121.MECH 122.P 123.Q

169	380	ASSEMBLE AND INSTALL LEADING EDGES USING MIL-S-8784 SEALANT.	7.0	1.0	B	20.0
169	390	INSPECT/REPAIR/REPLACE LEADING EDGE FAIRINGS.	3.5	6.0	B	10.0
169	400	SEAL ALL SEAMS, UPPER AND LOWER SURFACES IAW T.O. 1C-141B-23. INSPECT BEFORE PREPAINT. REMOVE AILERON FROM FIXTURE.			B	8.0
169	405	POSITION AILERON ON JIG MAKE FINAL HINGE ALIGNMENT CHECK USING BAR CHECK FIXTURE. RECORD FINDINGS				4.0
180	410	PREPAINT TREAT IAW T.O. 1-1-2 AND T.O. 1-1-8. NOTE: ITEM MUST BE PAINTED WITHIN 48 HOURS. RECORD TIME: _____ DATE _____				1.0
180	420	APPLY FINISH TO AILERON RECORD TIME _____ DATE _____			B	8.0
180	430	FORTY-EIGHT HOURS AFTER PAINT, PERFORM WET TAPE TEST IAW T.O. 1-1-8 NOTE: N/A IF NOT REQUIRED. WET TAPE TEST STARTED: _____ TIME _____ DATE _____			B	0.0
180	440	PERFORM WEIGHT AND BALANCE.			B	0.0
169	450	INSTALL WR-ALC DECAL IAW MAOI 66-40. WORK UNIT CODE 14AA0. COMPLETE FORM 349.				1.0
169	460	FINAL VISUAL INSPECT.			B	0.5
169	470	TAG AND TURN IN.			B	1.0
		MANE/88141 MANS/88141 MANP/88141 MAGN/88141				45.5

MANPSA CONTROL FACTORS
TABLE 10.4.2-1

BASE	BASE+	BASE++
<ul style="list-style-type: none"> • INCREASE FY 88 WORKLOAD BY 130%. • ALL OTHER FACTORS REMAIN IN THE AS-IS CONDITION. 	<ul style="list-style-type: none"> • INCREASE FY 88 WORKLOAD BY 130%. • WRITE PSUEDO WCD FOR C-141 AILERON - PCN 05502A. • MODIFY 1 SET (QTY 2) OF FIXTUREPM9450. • DESIGN & BUILD CHECK BAR. 	<ul style="list-style-type: none"> • INCREASE FY 88 WORKLOAD BY 130%. • WRITE PSUEDO WCD FOR C-141 AILERON - PCN 05502A. • MODIFY 1 SET (QTY 2) OF FIXTUREPM9450. • DESIGN & BUILD CHECK BAR. • BUILD TWO MORE SETS (QTY 4) NEW FIXTURES FOR PCN 05502A.

LSC-20610

MANPSA SHEET METAL SHOP TAGUCHI ORTHOGONAL ARRAY
TABLE 10.4.2-2

RUN #	FACTORS & LEVELS					WORKLOAD (THROUGHPUT)			
	MANPOWER		OVERTIME		EQUIPMENT	INDUCTIONS: 514: 130% OF FY 88			
	1	2	3	SAT	SUN	AVG.	BEST	WORST	
1	ALL					103.0 %	51352A 117 %	51454A 84 %	
2	ALL					87.0 %	51352A 115 %	05502A 8 %	
3	ALL			YES	YES	93.0 %	51352A 115 %	05502A 38 %	
4	50% 50%					96.0 %	51352A 116 %	05502A 53 %	
5	50% 50%					103.0 %	51352A 114 %	51454A 84 %	
6	50% 50%			YES	YES	91.0 %	51352A 115 %	05502A 24 %	
7	1/3 1/3 1/3		1/3			87.0 %	51352A 115 %	05502A 8 %	
8	1/3 1/3 1/3		1/3			101.0 %	51352A 114 %	05502A 82 %	
9	1/3 1/3 1/3		1/3			103.0 %	51352A 115 %	51454A 77 %	
SURGE*	50%**	50%**				90.1 %	51352A 109 %	51454A 43 %	

NOTES:
 * INDUCTIONS = 1215 (4 QTRS)
 ** TWO 12 HOUR SHIFTS.

LSC-20612

MANPSA REVISED CONTROL FACTORS
TABLE 10.4.2-3

BASE	BASE+	BASE++
<ul style="list-style-type: none"> • INCREASE FY 88 WORKLOAD BY 130%. • ALLOCATE ALL MANPOWER TO FIRST SHIFT. • ALL OTHER FACTORS REMAIN IN THE AS-IS CONDITION. 	<ul style="list-style-type: none"> • INCREASE FY 88 WORKLOAD BY 130%. • ALLOCATE ALL MANPOWER TO FIRST SHIFT. • REVISE PSUEDO WCD FOR C-141 AILERON - PCN 05502A. • MODIFY 1 SET (QTY 2) OF FIXTUREPM9450. • DESIGN & BUILD CHECK BAR. 	<ul style="list-style-type: none"> • INCREASE FY 88 WORKLOAD BY 130%. • WRITE PSUEDO WCD FOR C-141 AILERON - PCN 05502A. • MODIFY 1 SET (QTY 2) OF FIXTUREPM9450. • DESIGN & BUILD CHECK BAR. • BUILD THREE MORE SETS (QTY 6) NEW FIXTURES FOR PCN 05502A.

NOTE: REVISED PSUEDO WCD - PCN 05502A RESULTS FROM THE MODIFIED LSC-20611
FIXTURE USED AT OP. 265 INSTEAD OF OP. 400. REVISED PSUEDO WCD
IS DEPICTED IN 6.0 OF MANPSA DDB.

MANPSA SHEET METAL SHOP MODEL RESULTS

TABLE 10.4.2-4

RUN #	FACTORS & LEVELS							AVG.	05502A THROUGHPUT	05502A FLOW TIME
	MANPOWER			OVERTIME		EQUIPMENT				
	1	2	3	SAT	SUN					
1	ALL					BASE		522	93	1219
2	ALL					BASE +		466	25	4923
3	ALL					BASE ++		517	80	1956

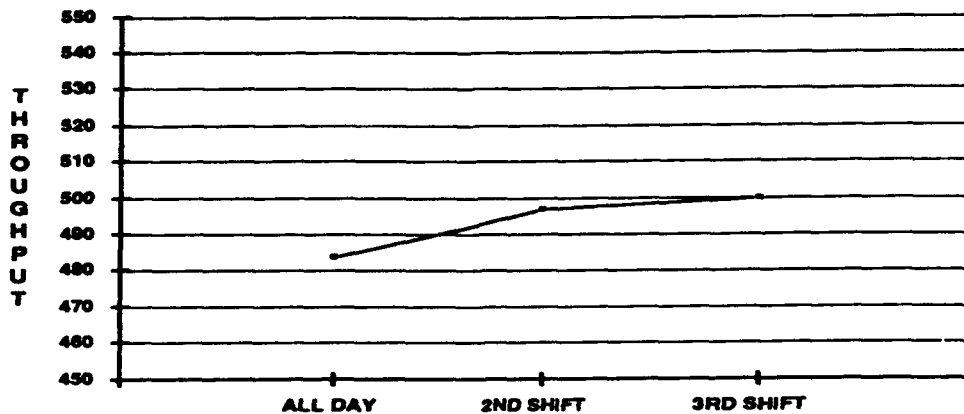
LSC-20613

MANPSA SHEET METAL TAGUCHI ORTHOGONAL ARRAY

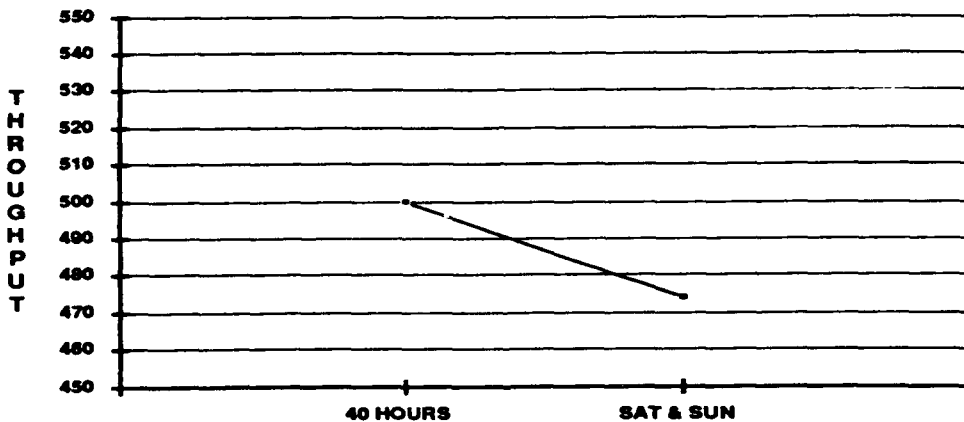
TABLE 10.1.1.1

RUN #	FACTORS & LEVELS					WORKLOAD (THROUGHPUT)			
	MANPOWER		OVERTIME		EQUIPMENT	130% OF FY 88		SURGE	
	1	2	3	SAT	SUN	QTY	%	QTY	%
1	ALL				BASE	528	100	723	60
2	ALL				BASE +	446	87		
3	ALL			YES	BASE ++	480	93	1040	86
4	50% 50%				BASE ++	496	96		
5	50% 50%				BASE	530	100		
6	50% 50%			YES	BASE +	467	91		
7	1/3 1/3 1/3		1/3		BASE +	446	87		
8	1/3 1/3 1/3		1/3		BASE ++	523	100		
9	1/3 1/3 1/3		1/3		BASE	531	100		

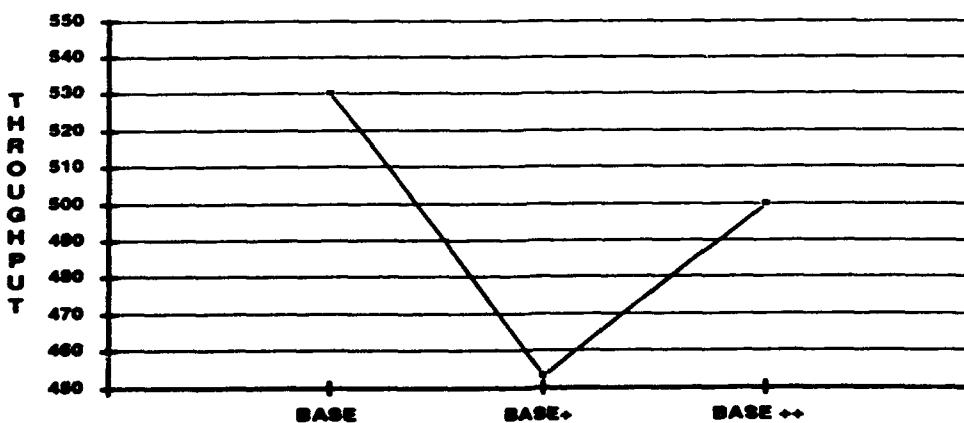
MANPOWER DISTRIBUTION



OVERTIME



FIXTURES/EQUIPMENT



MANPSA EXPERIMENTATION RESULTS

MANPSA - WRALC

FACTORS / ASSUMPTIONS

BASE : INCREASE FY88 WORKLOAD BY 130%. AND USE ALL OTHER RESOURCE AS IN "AS-IS" CONDITION.

BASE+ : . INCREASE FY88 WORKLOAD BY 130%.
• PROCESS PSEUDO WCD FOR PCN 05502A - C141 AILERON.
• MODIFY THE EXISTING 1 SET OF FIXTURE (PM 9450) - CODE NEWFX.
• DESIGN AND BUILD CHECK BAR.
CODE: CHBAR.

BASE++ : . INCREASE FY88 WORKLOAD BY 130%.
• PROCESS PSEUDO WCD FOR PCN 05502A C141 AILERON.
• MODIFY THE EXISTING 1 SET OF FIXTURE (PM 9450) - CODE: NEWFX.
• BUILD 2 MORE SET OF FIXTURE
CODE: NEWFX.
• DESIGN AND BUILD CHECK BAR

WRALC - MANPSA

SURGE:

WORKLOAD - INCREASE EXPERIMENTATION
WORKLOAD, WHICH IS 130% OF FY88, BY
THE % OF FY90 SURGE REQ.

WEAPON SYSTEM	SURGE %
C141	^{FY90} 246
C130	159
F15	61

EXECUTE RUN #1 & RUN #3 FOR THE
SENSITIVITY ANALYSIS WITH MANDNER
SPREAD BETWEEN (2) SHIFTS 12HRS
PER SHIFT AND 5 DAYS A WEEK.

WR - ALC
MANPSA

Manpower

$$① \frac{528 + 446 + 480}{3} = \frac{1454}{3} = 484 = 94\%$$

$$② \frac{496 + 530 + 467}{3} = \frac{1493}{3} = 497 = 96\%$$

$$③ \frac{446 + 523 + 531}{3} = \frac{1500}{3} = 500 = 97\%$$

OVERTIME

$$\frac{480 + 467}{2} = \frac{947}{2} = 474 = 92\%$$

$$40\% = \frac{R1}{528} + \frac{R2}{446} + \frac{R4}{496} + \frac{R5}{530} + \frac{R7}{446} + \frac{R8}{523} + \frac{R9}{531} = \frac{3500}{7} = 500 = 97\%$$

FIXTURE / EQUIPMENT

$$Base : \frac{528 + 530 + 531}{3} = \frac{1589}{3} = 529.6 = 103\%$$

$$Base + : \frac{446 + 467 + 446}{3} = \frac{1359}{3} = 453 = 88\%$$

$$Base ++ : \frac{480 + 496 + 523}{3} = \frac{1499}{3} = 500 = 97\%$$

R 203

MANPSA - WRALC

SUMMARY:

REVIEWED THE RESULTS OF THE OUTPUT ANALYSIS OF THIS EXPERIMENTAL DESIGN FOR RCL MANPSA. THE RESULT DOES IDENTIFY THE AREA OF POTENTIAL IMPROVEMENT AND PROBLEM.

SIMULATION OUTPUTS INDICATES THAT THE 130% OF FY88 THROUGHPUT CAN BE ACCOMPLISHED WITH PRESENT MANPOWER AND FIXTURES. SPREADING OF MANPOWER SEEMS TO BE MORE EFFICIENT.

ANALYSIS OF OUTPUT DOES ALSO INDICATE THAT THE MODIFICATION OF FIXTURE ALONE WILL NOT IMPROVE THE THROUGHPUT OR FLOW TIME. BETTER ALLOCATION OF MANPOWER AND FINE TUNNING OF PROCESS IS ALSO NECESSARY.

RUN #1 OF SPRAE DOES NOT CONSIDERED FOR THROUGHPUT OF RCL ANALYSIS. BUT, BY ANALYSING THE THROUGHPUT BY PCN REVEALS THAT ON AN AVERAGE ONLY 56% CAN BE ACCOMPLISHED AT AS-IS CONDITION.

(MODIFIED)

 * WORK CONTROL DOCUMENT MB017Y * 1. DATE 88141 PAGE 1 OF 4 PAGES

 2. PSSD/RCC 3. MATERIAL 4. MIC 5. ERRC 6. QTY 7. SCHED DT 8. COMP DT
 NPSAC
 9. MODEL/DESIGN/SERIES 10. NOUN AILERON 11. ITEM SERIAL
 *
 12. BCN 12A. SER NO. 13. TECH DATA/OPTIONAL
 1-1-2, 1C-141B-3, 1-1A-8
 1C-141B-36, 1C-141B-23
 1C-141B-4, 1-1-8, 3W39022
 14. PART NUMBER 15. STOCK NR. 16. PDN 17. BCN
 8130281-10 1560011287501JH 05502A 806445
 8130281-20 1560011287502JH 05503A 806446
 18. DISF-19. PDN/
 STATION/OP NO. 20. WORK TO BE ACCOMPLISHED 21. MECH 22. P 23. Q
 169 010 REMOVE HONEYCOMB LEADING EDGES &
 MNPSA TAB. ROUTE AILERON & COMPONENTS
 TO MNPDD7 (BLDG. 180) B 20.0
 180 020 DEPAINT/CLEAN/TREAT CORROSION
 MNPSA IAW T.O. 1-1-2, SECTION VI .5
 169 030 DISASSEMBLE DAMAGED LEADING
 MNPSA EDGES; INSPECT AND REPAIR PER
 SUPPLEMENTAL WCD MBA17Y 12.5
 169 040 INSPECT/REPAIR DAMAGED LEADING
 MNPSA EDGE SHROUDS. 12.0
 169 050 REMOVE/INSPECT/REPAIR AILERON
 MNPSA TAB PER SUPPLEMENTAL WCD
 MBA17Y. 12.0
 169 060 POSITION AILERON ON 3 WORK
 MNPSA TABLES AND MAKE HINGE ALIGNMENT
 CHECK USING BAR CHECK FIXTURE. 4.0
 MNPSA RECORD FINDINGS. 0
 169 070 REMOVE CHECK FIXTURE. 2
 MNPSA 0
 169 080 REMOVE AND ROUTE BEARINGS
 MNPSA WITH SUPPLEMENTAL WCD MB017Y 6
 60

8. DISP-19. PDN/ TATION: OP NO.	20. WORK TO BE ACCOMPLISHED	21. MECH	22. P	23. Q
169 090 MNPSA	PRIOR TO BEGINNING EXTENDED REPAIR INVENTORY KIT FOR COMPLETION PER PACKING LIST/BILL OF MATERIAL.		B	1.0
169 100 MNPSA	INSTALL AILERON IN WORK FIXTURE. REMOVE BOTTOM SKIN, P/N 3W3400 8-124 (R/H) OR 3W3400-23 (L/H). NOTE: OLD SKIN WILL BE USED AS A DRILL TEMPLATE. SALVAGE DOOR CUT OUT DOUBLER, P/N 3W34930.			10.
169 110 MNPSA	INSTALL NEW FITTINGS AND RIB CAPS IAW DRAWING 3W39022. (REPAIR/ REPLACE RIB WEBS IF NEEDED).		B	50. 40.0
169 120 MNPSA	REMOVE LOWER BEAM CAP (SPAR) AND SPlice ANGLES/DOUBLERS.		B	10.0
169 130 MQCFCP	CONDUCT EDDY CURRENT SURFACE SCAN OF SALVAGED LOWER BEAM CAP SPlice AREA PER DETAIL #31 OF DRAWING 3W3922. RECORD FINDINGS		K	0.5
169 140 MQCFCP	CONDUCT BOLT HOLE EDDY CURRENT INSPECTION OF INDICATED HINGE FITTING ATTACH HOLES THRU WEB AND UPPER BEAM CAP PER DETAIL		K	0.5
169 150 MNPSA	VISUAL INSPECT AILERON MAIN BEAM WEB FOR DAMAGE AND CORROSION. REPAIR/REPLACE AS NEEDED.		B	14.0
169 160 MNPSA	INSTALL NEW LOWER BEAM CAP AND SPlice ANGLES/DOUBLERS.		B	20.0
169 170 MNPSA	DRILL NEW SKIN USING OLD SKIN AS PATTERN. MAKE ALL CUT OUTS PER DRAWING 3W39022.			14.0
169 180 MNPSA	BOND SHIM TO HINGE PLATE ATTACH POINT.			4.
169 190 MNPSA	PRIOR TO CLOSURE, INSPECT AREA FOR FOD.		B	1.0
169 200 MNPSA	INSTALL NEW SKIN, DOUBLERS, AND DOORS.		B	20
169 210 MNPSA	INSTALL BEARINGS.			8.0

19. DISP-19. PDN/ ACTION: OP NO.		20. WORK TO BE ACCOMPLISHED	21. MECH	22. P	23. Q
169	240 MNPSA	VISUAL INSPECT/REPAIR UPPER BEAM ASSY.		B	2.4.0
169	250 MNPSA	VISUAL INSPECT/REPAIR STRUCTURAL DAMAGE IAW T.O. 1C-141B-3, SECTION II		B	4.0.0 50.0 30.0
169	260 MNPSDF	INSPECT/REPAIR FIBERGLASS TRAILING EDGE IAW T.O. 1-1-14 AND T.O. 1C-141B-3.		B	0.5
169	270 MNPSA	ROUTE MISC PARTS TO MNPDAS FOR HEAT TREAT., IAW SUPPLEMENT SHEET MBD17Y			0.5
169	280 MNPSA	ROUTE MISC PARTS TO MNPDAS FOR PLATING. IAW SUPPLEMENT SHEET MBD17Y.			1.0
169	290 MNPSA	REMOVE STATIC DISCHARGES. CHECK FOR CORROSION. REPAIR OR REPLACE IAW T.O. 1C-141B-3 AND T.O. 1C-141B-2-2JG-3-2. NOTE: USE ADHESIVE 8030011186251 (PROSEAL 872). CURE AS REQUIRED. SEAL STATIC DISCHARGES WITH MIL-S81733 SEALANT.		B	12.0
169	300 MNPSA	CHECK HYDRAULIC HOSES AND REPLACE IF NECESSARY IAW T.O. 42E 1-1-1.		B	2.0
169	310 MNPPCD	PERFORM ELECTRICAL RESISTANCE CHECK ON EACH STATIC DISCHARGER RETAINER. REF. T.O. 1C-141B-2-2JG-3-2 AND LAC PROCESS SPEC. 2058.		B	0.5
169	320 MNPSA	INSPECT/REPAIR/REPLACE DAMAGED UPPER SPAR SHROUDS.			12.5
169	330 MNPSA	INSPECT AILERON IN FIXTURE PRIOR TO FINAL ALIGNMENT CHECK			2.0
169	340 MNPSA	MILL SHIM.		B	2.0
169	350 MNPSA	INSPECT TAB HINGES PRIOR TO TAB INSTALLATION USING BAR CHECK FIXTURE.			2.0
169	360 MNPSA	INSPECT/REPAIR TAB BOOT. INSTALL TAB ON AILERON.		B	10.0 16.0
169	370 MNPSA	PRIOR TO INSTALLING LEADING EDGES, INSPECT AILERON INTERIOR FOR FOD.		B	1.0

9. DISP-19. PDN/ ATION: OF NO.		20. WORK TO BE ACCOMPLISHED	21. MECH	22. P	23. Q	
169	380 MNPSA	ASSEMBLE AND INSTALL LEADING EDGES USING MIL-S-8784 SEALANT.			B	20.0
169	390 MNPSA	INSPECT/REPAIR/REPLACE LEADING EDGE FAIRINGS.			B	10.0
169	400 MNPSA	SEAL ALL SEAMS, UPPER AND LOWER SURFACES IAW T.O. 1C-141B-23. INSPECT BEFORE PREPAINT. REMOVE AILERON FROM FIXTURE.			B	8.0
169	405 MNPSA	POSITION AILERON ON 3 WORK TABLES AND MAKE FINAL HINGE ALIGNMENT CHECK USING BAR CHECK FIXTURE. RECORD FINDINGS				4.0
180	410 MNFDD7	PREPAINT TREAT IAW T.O. 1-1-2 AND T.O. 1-1-8. NOTE: ITEM MUST BE PAINTED WITHIN 48 HOURS. RECORD TIME: _____ DATE _____				1.0
180	420 MNFDCF	APPLY FINISH TO AILERON RECORD TIME _____ DATE _____			B	8.0
180	430 MNFDCF	FORTY-EIGHT HOURS AFTER PAINT, PERFORM WET TAPE TEST IAW T.O. 1-1-8 NOTE: N/A IF NOT REQUIRED WET TAPE TEST STARTED: TIME _____ DATE _____			B	0.0
180	440 MNFDCF	PERFORM WEIGHT AND BALANCE.			B	0.0
169	450 MNPSA	INSTALL WR-ALC DECAL IAW MAOI 66-40. WORK UNIT CODE 14AA0. COMPLETE FORM 349.				1.0
169	460 MNPSA	FINAL VISUAL INSPECT.			B	0.0
169	470 MNPSA	TAG AND TURN IN.			B	1.0
		MANE/88141 MANS/88141 MANP/88141 MAON/88141				45.5

TECHNOLOGY INSERTION PROGRAM

WR-ALC

MANPS - SHEET METAL SHOP

Bob Bashyan
Bill Rich

Possible Focus Study List

<u>Description</u>	<u>RCC</u>
1. Study to Improve Facilities Layout for Building 169	MANPSC MANPSA
2. Study to Improve Facilities Layout for Building 603	MANPSD
3. Study to Improve Facilities Layout for Building 670	MANPSD
4. Redesign/Modify Existing Jigs/Fixtures Such As Aileron Jig (Make Working Jig in lieu of Solely a Check Fixture)	MANPSA MANPSC
5. Redesign/Modify Existing Holding Fixtures so as to Rotate/Lock Part Being Repaired for Better Access and Less Worker Strain	All
6. Study to Design Holding Fixtures (Customized Shape/Size to be Used in lieu of Flat-Top Tables)	All
7. Study to Make a Fully Computerized "Work Book" (WCD) System in lieu of Current Unreadable "Paper-Mill"	All
8. Study for CADAM Data Storage and Retrieval MASTER Dimension Control System for General Tool Dimensional Control as well as for Part/Assembly Data Source	All
9. Study to Complement LIFT Plan and to Determine/Assign Priorities for New, More Modern/Diverse Sheet Metal Machinery, Facilities, and Equipment	All
10. Feasibility Study for WR-ALC to Manufacture C-141 Petal Door Outer/Inner Skin Assemblies In-House	All

TECHNOLOGY INSERTION PROGRAM

WR-ALC

MANPS - SHEET METAL SHOP

**Bob Bashyam
Bill Rich**

Possible Quick Fix List

Description

RCC

- | | |
|---|------------------|
| 1. Develop a Mechanic's "Hand Book" for Each Repaired Assembly | All |
| 2. Implement Mechanic "Buy-Maintain" (Buying Only Necessary Tools!) Tool-Set Program | All |
| 3. Provide Heavy Cardboard Shipping Boxes for Small/Medium Size Parts | All |
| 4. Move Bond Mechanics Closer to the Autoclaves | MANPSA
MANPSC |
| 5. Provide Level Aileron Support Tables Until a Better Holding Fixture Can Be Provided | MANPSA |
| 6. Provide Better Quality Drill Bits in lieu of the Current Re-Sharpended Ones | All |
| 7. Provide Certain Mechanics with a Needed 45-Degree Angle Drill Attachment and an Approximate "3X" Rivet Gun (For 1/8"/5/32" Rivets) | All |
| 8. Provide Pictorial - Drawings with the Existing "Work Books" (WCD's) | All |
| 9. Review and Allocate Sufficient and Dedicated Work Space for Each Work Station | All |
| 10. In Conjunction with 2 Above, Reduce Size of Mechanics Tool Box to Approximately 1/2 the Current Size (Thereby Saving Much Valuable Space) | All |
| 11. Put More Emphasis on QP4: | All |

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Possible Quick Fix List (continued)

MANPS
Bob Bashyan
Bill Rich

Description

RCC

- | | |
|---|--------|
| 12. Include the Manufacturing Supervisor in ALL Task Force Formations When Quality/Production Would Be Discussed or/and Decisions Made to Affect Same | All |
| 13. Design/Build Aileron Tab Hinge Locator | MANPSA |
| 14. Design/Build a "Newspaper Clipping Cutter" to Cut the Thin Skins on the C-141 Horizontal Stabilizer Leading Edges | MANPSA |
| 15. Evaluate Cleanliness Condition in Work/Staging Area Near the Autoclaves in Building 169 | MANPSA |
| 16. Review Safety Precautions in the Use of Methel-Ethel-Ketone (MEK), Depleted Uranium Counter-Balance Weights and Asbestos Clamps Used in Building 603 on the C-141 Wing Leading Edge | All |
| 17. Senior Mechanics/Supervisors/Alternates should Outline the Repair Processes for the Repaired Assemblies (to be Used in Conjunction with 1 Above) | All |
| 18. Implement Methodology to Eliminate Missing Petal Door Strake Parts | MANPSA |
| 19. Use "T" Material (Form in "W" Temper) in lieu of "O" | All |
| 20. Use Lockheed "Status" to Determine Latest Drawing/Effectivity | All |
| 21. Certify Mechanic Doing Repair Work on the Horizontal Stabilizer Leading Edges for "Ohmmeter" and "Brazing" Use | MANPSA |
| 22. Need "Window Area" Plot for F-15 Radome Repair Use | MANPSD |

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Possible Quick Fix List (continued)

MANPS
Bob Bashyan
Bill Rich

Description

RCC

23. Need Holding/Support Fixtures for ALL Radomes
24. Move F-15 Canopy Repair Effort Out of Building 670
25. Provide Capability to Brush Alodine for Building 603
26. Remove C-130 Leading Edge (Unused) Jigs From Building 603
27. Need Better/Larger/Cleaner Toilet Facility for the Women Mechanics in Building 603
28. Need More Space for the C-141 Nozzles in Building 603
29. Need More Space for the Radomes in Building 670
30. Combine Repair Operations for the C-141 AFT Cowl Door to Use One (1) Mechanic in lieu of the Present Two (2)
31. Make Available to ALL ALC's Paul C. Bevan "Patch-Puller-Ring" for Fiberglass Repair
32. Encourage Suggestions Like Wendell Pittman's Investigation and Persistence in His Investigation of Missing Petal Door Strake Parts
33. Make Use of and Assign More Manufacturing Responsibility to the Planning Section for ALL Manufacturing/Engineering Coordination
34. Make Available Cobalt-Tipped Drill Bits, or Equipment, for Mechanic's Use for Drilling Out Fasteners

MANPSD

MANPSD

MANPSD

MANPSD

MANPSD

MANPSD

MANPSD

MANPSD

MANPSA

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Following are the Potential Improvements for Quick Fix.

10.0 WARNER ROBINS AIR LOGISTIC CENTER (WR-ALC)

10.1 QUICK FIX OPPORTUNITY TO DEVELOP A MECHANIC'S "HAND BOOK" FOR EACH REPAIRED ASSEMBLY. THE MECHANICS WOULD OUTLINE THE REPAIR PROCESSES FOR THE ASSEMBLIES BEING REPAIRED (MANPS).

10.1.1 Description of Current Operations

Most of the mechanic's training is received by actual "on-the-job" experience working with someone more experienced on the particular unit being repaired. Most experienced mechanics have made written notes to help guide them in the repair effort.

10.1.2 Description of Current Process Problems

The mechanic's sequence of tear-down, inspection and repair may vary compared with the WCD operation numbering. Certain peculiarities in the rework process may require a knowledge far in excess of the T.O. and the WCD instructions.

10.1.3 Description of New Process

Compile and publish a mechanic's training handbook written for each assembly being repaired in MANPS. The manual would compliment and supplement the Technical Orders and be compiled by training specialists using the experiences and input of the top mechanics currently doing the repair work as a guide. The training manual would be initiated to recognize the subtles of the repair process and would document all major steps and techniques of each repaired assembly unit. The Manual would be coordinated through the Training Monitor and the cognizent Process Engineer, Manufacturing Engineer, Planner, Production Supervisor and Quality People.

10.1.4 Rationale Leading to Change

The "Hand-Books" would help train new people in a rapid build-up such as a "Surge" or "War-Time" situation or in any crisis such as the present mechanics "turn-around" due to the F-15 wing effort or where a production rate increase would be necessary. Additional training and motivational courses would also be beneficial in conjunction with the "Hand-Books".

10.1.5 Estimated Cost Savings

Observations and interviews have indicated a potential average increase in efficiency for each new/old mechanic of 20% for the first 30 day period and a 10% increase thereafter.

10.1.6 Implementation Cost/Schedule

Cost of an existing training specialist to coordinate the inputs is estimated to be \$10,000 per anum (pro-rated).

Cost of preparing and reproducing each manual is estimated to \$10 per copy.

Implementation could be realized in about 60 days from "Go-Ahead".

10.2 QUICK FIX OPPORTUNITY TO IMPLEMENT MECHANIC "BUY - MAINTAIN" TOOL-SET PROGRAM (BUYING ONLY NECESSARY TOOLS, THEREBY REDUCING THE SIZE OF THE TOOL BOX) (MANPS).

10.2.1 Description of Current Operations

All sheet metal mechanics are issued a standard set of tools, a tool box and a tool stand with drawers. Some of the tools have an everyday use, some have a limited use and some of the tools issued are never used: For example, the rivet guns issued have limited use while the most widely used gun, (3X type for 1/8" and 5/32" ad rivets) is not included - neither has a 45 degree pneumatic angle drill attachment been included. There are other instances.

10.2.2 Description of Current Process Problems

In some instances the replacement of a broken tool takes up to several weeks for replacement. In the interim, the mechanic either uses a "loaner" from the tool crib or borrows/shares a tool with a team member. These large tool box/tool stand occupy much valuable space and to reduce the number of tools would save much space, by requiring much smaller box/tool stands.

10.2.3 Description of New Process

Other repair facilities require the mechanics to buy and maintain their own set of necessary tools. These companies establish the requirements for the tool set and assist the mechanics in selecting the manufacturers of the tools. Inferior quality items that do not hold up and which constantly require replacement are eliminated. The tool manufacturers most often offer a life-time guarantee and a substantial discount to the mechanic because of the volume purchases. This has proven to be cost effective in many instances, for maintenance facilities such as Eastern, Delta, Hayes and Lockheed Air Service, etc.

One or two sets of "Limited-Use Tools" could be issued to a RCC repair area for general use.

10.2.4 Rationale Leading to Change

- . The reduction of the number of tools/tool box/tool box stand by 50% would save much space.
- . Eliminate/reduce tool crib manpower and storage area.
- . Eliminate/reduce buying activity and expense.
- . Provide the mechanic with the necessary tools to work with!
- . Provide the mechanic with an expeditious way to replace broken tools.
- . Make the mechanic responsible for the tools that he uses to do his assigned tasks.

10.2.5 Estimated Cost Savings

Interviews have indicated a possible savings of 10 man hours per week for each mechanic if he/she had a proper "Tool Set".

Observations have shown that a reduction in size due to the mechanic having only necessary tools from 6.50 square feet to 3.25 square feet would also save approximately 3 square feet per mechanic. This would be a significant amount of space to be gained in Building 670, for example.

10.2.6 Implementation Cost/Schedule

The schedule and implementation cost would require further study and selection of tool needs, which would vary with each RCC, and tool suppliers.

10.4³ QUICK FIX OPPORTUNITY TO MOVE BOND MECHANICS CLOSER TO THE AUTOCLAVES OR ALLOW THE REPAIR GROUP CLOSE TO THE AUTOCLAVE TO DO THE BOND WORK (MANPSA).

10.4³.1 Description of Current Operations

In addition to other miscellaneous small bonded assembly units, there are approximately fourteen (14) frame and longeron assemblies for the C-141 Petal and seven (7) Leading Edge Sections for the C-141, Aileron which require the units to be rebonded when they undergo repair.

10.4³.2 Description of Current Process Problems

The Aileron parts are rebuilt in W. Blackmon's area adjacent to the autoclave area and returned to S. Williams' control after completion, but the Petal Door parts are rebuilt in T. Cherry's area and then sent to rebond by the Petal Door mechanic and returned to him after completion. This is not an efficient flow of work effort.

10.4³.3 Description of New Process

(Need to "certify" all mechanics in Bond Shop.)

Move those workers closer to the autoclave who work/repair small bonded assemblies such as the frame assemblies for the C-141 Petal Doors and the C-141 Aileron Leading Edges, thereby reducing time lost by going back and to. (Always make the transit worker responsible to the Supervisor who is responsible for the final inspection and buy-off of the unit being repaired).

An alternate way to eliminate to and fro travel by the mechanics would be to allow the repair group close to the autoclave to do all the bond work.

10.4³.4 Rationale Leading to Change

Centralizing the bonding of small rebuilt assemblies would tend to:

- . Eliminate wasted time and steps.
- . Produce consistently better quality work.
- . Have the bonding operation in a cleaner and better controlled environment.
- . "Free" the "Home" mechanic to do more specialized work for which he is more qualified than others.

10.³~~4~~.5 Estimated Cost Savings

It is estimated that a savings of 10 man hours per week could be realized.

10.³~~4~~.6 Implementation Cost/Schedule

Cost of moving would be negligible and the schedule-to-move would be very flexible.

4
10.5 QUICK FIX OPPORTUNITY TO PROVIDE LEVEL AILERON SUPPORT TABLES UNTIL A BETTER HOLDING FIXTURE CAN BE PROVIDED (MANPSA).

4
10.5.1 Description of Current Operations

The support tables for the C-141 Ailerons are not all the same height requiring time and effort to level, per WCD instructions, before the Aileron can be worked. The Aileron must be level while skin work, hinge work, tab removal work or the leading edges are removed.

4
10.5.2 Description of Current Process Problems

(The effort to level the tables has been in the planning stage for about a year or so, according to some interviewees in the area.)

4
10.5.3 Description of New Process

Provide tables the same height to support the Ailerons (until customized cradle-type support holding fixtures are available).

4
10.5.4 Rationale Leading to Change

The customized cradles will support the Ailerons and eliminate the "Man-handling" and "Flip-flopping" from side to side and also allow both sides and the beam/tab area to be worked simultaneously.

4
10.5.5 Estimated Cost Savings

The level tables will save leveling time (usually 15-20 minutes) for 2 -3 mechanics and eliminate overhanging of the Aileron when tables are not available.

4
10.5.6 Implementation Cost/Schedule

The cost and schedule of leveling the existing tables should be available through Kevin Warnock (926-4446).

10.5
10.5 QUICK FIX OPPORTUNITY TO PROVIDE PICTORIAL - DRAWINGS
WITH THE EXISTING "WORK BOOKS" (WCD'S) (MANPS).

10.5
10.5.1 Description of Current Operations

The current copies of the WCD's (Work Books) are difficult to read and hard to understand. (This is true industry-wide.)

10.5
10.5.2 Description of Current Process Problems

Mechanic personnel do not adequately use the WCD's for repair instructions! They do not make proper use of the T.O.'s either!

10.5
10.5.3 Description of New Process

The Production Planner, with assistance from the Art Department, should provide a pictorial drawing, (exploded step-by-step drawing or otherwise), to accompany the "Work Book" (Work Control Document) to assist the worker to better understand the task and to help train others in a Surge or War-Time emergency situation.

10.5
10.5.4 Rationale Leading to Change

New mechanics (and old mechanics, also) would be more productive and understand what they are doing if better work instructions were given them.

Most other repair facilities are using pictorial drawings to supplement the T.O.'s and the planning sheets, and quality has in most cases, improved considerably because the mechanic better understood what they were supposed to do.

10.5
10.5.5 Estimated Cost Savings

It is estimated that the mechanic's efficiency would increase from 10% to 20% (but would vary with the individual) if he/she had a more comprehensive and understandable set of repair instructions to follow.

10.5
10.5.6 Implementation Cost/Schedule

A full time illustrator to make the drawings would cost approximately \$20,000 per year and could reduce the planning staff by a like number due to a reduction in contacts from manufacturing. An estimate of about 30 - 90 days to hire the necessary people and organize the effort would be required.

⁶
10.10 QUICK FIX OPPORTUNITY TO DESIGN/BUILD AILERON TAB HINGE LOCATOR (MANPSA).

⁶
10.10.1 Description of Current Operations

The current method, when a tab hinge bracket has to be replaced, is to use the tab assembly as a tool and locate the bracket being replaced by using the tab. This is rather difficult to do because the tab leading edge is in the way which makes it hard to position and locate the required shims behind the new fittings.

⁶
10.10.2 Description of Current Process Problems

A hinge locator and alignment tool is sorely needed to assist the replacement of an aileron tab hinge fitting on the C-141 Aileron rear beam.

⁶
10.10.3 Description of New Process

A simple bar type locator tool would be sufficient and speed up the task.

⁶
10.10.4 Rationale Leading to Change

Observation and interviews with the supervisor and several mechanics indicated the hinges replacement was a problem.

⁶
10.10.5 Estimated Cost Savings

The hinge replacement requires an average of 10 man hours per Aileron to replace the bad tab hinge fittings. This time would be reduced to approximately 1/2 of this or about 5 man hours with a bar-type locator tool.

⁶
10.10.6 Implementation Cost/Schedule

The cost of a simple bar-type tool would be the primary cost involved:

. Material Cost	=	\$500 (Steel tube and bar)
. Welding	=	100 (4 man hours)
. Machining	=	300 (10 man hours)
. Engineering	=	500 (8 man hours)

10.11.7 QUICK FIX OPPORTUNITY TO DESIGN/BUILD A "NEWSPAPER CLIPPING CUTTER" TO CUT THE THIN SKINS ON THE C-141 HORIZONTAL STABILIZER LEADING EDGES (MANPSA).

⁷
10.11.1 Description of Current Operations

The thin .005 thick stainless steel cover skins for the C-141 Horizontal Stabilizer de-icer leading edge assemblies (8 per aircraft) must be removed in order to inspect and repair the embedded direct current wires and the heating elements.

⁷
10.11.2 Description of Current Process Problems

The current way of skin removal is to cut and peel the cover skins using a wood chisel, tin snips, pliers, etc. to remove the skin without damaging the wires or the heating elements.

⁷
10.11.3 Description of New Process

Design and make a depth cutter similar to the type cutter used to cut out newspaper clippings. This type cutter may be set to cut at a predetermined depth so as to cut the (.005) stainless steel thin skin cover and not cut the wires.

⁷
10.11.4 Rationale Leading to Change

(Observation led to believing that a better way should be found.)

This new method of skin removal would allow the old skins to be removed in an easier manner thereby saving time and producing a neater and a more professional repair job.

⁷
10.11.5 Estimated Cost Savings

A possible savings of two (2) man hours per leading edge section should be realized; for a total of eight (8) sections times two (2) equals sixteen (16) man hours saved per A/C.

⁷
10.11.6 Implementation Cost/Schedule

The only cost would be the "Clipping-Cutter" design and machine costs which should not exceed \$200. Machine time for the cutter should be under \$100.

10.15⁸ QUICK FIX OPPORTUNITY TO USE "T" MATERIAL (FORM IN "W" TEMPER) IN LIEU OF "O" (MANPS).

10.15.1⁴ Description of Current Operations

Most all forming of aluminum for aircraft requires that the material be in soft condition, either in "O" condition or in "W" temper condition. Both conditions, "O" and "W" are of the same softness.

Most engineering drawings and/or material specifications call for the two material conditions to be used interchangeably.

10.15.2⁴ Description of Current Process Problems

It is hard to store "O" condition material, easy to damage, and handle because of it's softness therefore it is better to buy and store aluminum in the "T" condition. There is also the possibility of a part made out of the "O" material getting on the structural airframe of an air vehicle, inadvertantly.

10.15.3⁴ Description of New Process

The "O" material requires a heat treat operation after forming to bring the part to a hardened state or "T" condition. The "W" condition is produced by a heat treat operation from the "T" condition, formed into the desired state, then the material returns to a hardened "T" condition at room temperature without any further heat treat.

In the event that "W" condition aluminum alloy sheet is used in lieu of "O", the material must be stored in cold storage while it is awaiting it's time to be worked. It has a shorter work time when it removed from the "ice-box" due to the materials ability to return to a hardened state at room temperature.

It is suggested that certain selected parts such as reinforcement doublers and formed parts be looked at and made from "W" condition rather than "O" condition thereby reducing the inventory of "O" material and conceivably reducing material costs, by eliminating excess scrapage.

10.15.4⁴ Rationale Leading to Change

Other production and repair facilities do not use and stock aluminum sheet stock in the "O" Temper in the thickness of .064 or less because of it's softness.

10.15.5 ⁸ Estimated Cost Savings

The cost savings would be indicated on the present scrappage cost which would be eliminated.

Scheduling is not available at this time.

10.15.6 ⁸ Implementation Cost/Schedule

Implementation of this suggestion requires selection of ^{parts} ~~pages~~ and procedure change. Estimated implementation time approximately 2 months.

10.17^a QUICK FIX OPPORTUNITY TO CERTIFY MECHANIC DOING REPAIR WORK ON THE HORIZONTAL STABILIZER LEADING EDGES FOR "OHMMETER" AND "BRAZING" USE (MANPSA).

10.17.1^a Description of Current Operations

The mechanic (Amanda Knight) has to use an Ohmmeter to check the continuity of the wiring on the C-141 Horizontal Stabilizer leading edge sections. These sections form an electrically de-iced section of the horizontal stabilizer. All sections are repaired either by repairing the wires and welding breaks in the mesh.

10.17.2^a Description of Current Process Problems

The mechanic has to use the back shop on four (4) occasions for the use of the "Ohmmeter" or the "Welding Unit," usually making the trips herself, to verify the repair.

10.17.3^a Description of New Process

In repairing the leading edge sections, the mechanic has to use an Ohmmeter to determine the repair so why not make it official by certifying the mechanic in it's use as well as the welding required to make the repairs to the mesh heating element.

10.17.4^a Rationale Leading to Change

Discussed with Sonny Heard, Training, the possibility of training/certification of Amanda Knight and others, if necessary, to the use of the Ohmmeter and the Welding/Brazing unit which would eliminate the back shop work and the related expense of the mechanic hand carrying the parts to and from the electrical building.

10.17.5^a Estimated Cost Savings

The elimination of four (4) back shop operations would save 4 times 2 man hours = 8 manhours per part; 8 parts times 8 man hours equals 64 man hours saved per aircraft.

10.17.6^a Implementation Cost/Schedule

The mechanic has checked out an Ohmmeter for repair use. Kevin Warnock (926-4446) has moved a "welder" to Building 169 for the mechanic's use.

¹⁰
10.19 QUICK FIX OPPORTUNITY TO NEED HOLDING/SUPPORT FIXTURES
FOR ALL RADOMES (MANPSD).

¹⁰
10.19.1 Description of Current Operations

The primary method of support for the radome repair in Building 670 is to place them directly on the floor. Some are elevated off the floor by the mechanics with 2 X 4's or other makeshift timbers.

Holding stands were made sometime back but are not being used and their whereabouts are now unknown.

¹⁰
10.19.2 Description of Current Process Problems

Some workers have expressed a desire to have the radomes elevated for better access and comfort.

¹⁰
10.19.3 Description of New Process

Holding stands/fixtures should be made to hold the radome on it's side and to allow the radome to be rotated. This method would be similar to the holding fixture currently being used with the C-141 nozzle repair effort.

10.19.4 Rationale Leading to Change

- . The radome would be accessible from one side thereby making better use of space.
- . Less worker fatigue.
- . Work efficiency increased.
- . Production rate increased.

¹⁰
10.19.5 Estimated Cost Savings

An increase of work efficiency from 10% to 15% is predicted which should increase throughput by a like amount for all radomes being worked in Building 670.

¹⁰
10.19.6 Implementation Cost/Schedule

The schedule and implementation costs will require further study based on an austere-type stand design.

10.21¹¹ QUICK FIX OPPORTUNITY TO PROVIDE CAPABILITY TO BRUSH
ALODINE FOR BUILDING 603 (MANPSD).

10.21.1¹¹ Description of Current Operations

Parts requiring alodine treatment have to be taken to Building 180, which is about two (2) miles distance from 603.

10.21.2¹¹ Description of Current Process Problems

No alodine treatment is currently available because of the lack of waste treatment/disposal.

10.21.3 Description of New Process

Either one of the following:

- (1) Step up the existing "Fast-Flow" pick-up and delivery system for the parts.
- (2) Temporarily provide five (5) collection drums with adequate exhaust/vent system at Building 603 and transfer the toxic waste to a tank truck for disposal.
- (3) Tie in to an existing waste disposal line at Building 645.

10.21.4¹¹ Rationale Leading to Change

- . Flow time will be reduced.
- . Throughput will be increased.
- . Cost will be reduced.

10.21.5¹¹ Estimated Cost Savings

The estimated cost would be contingent on the decision as to the selection of (1), (2) or (3).

The (1) is estimated to be the least expensive and (3) the most expensive with (2) somewhere in between but only as a temporary measure. Number (3) would be the ideal method to provide treatment.

10.21.6¹¹ Implementation Cost/Schedule

Implementation cost and schedule is contingent on the process selected:

- (1) Shortest time to implement.
- (2) Somewhere in between (1) and (3).
- (3) Longest time.

¹²
10.24 QUICK FIX OPPORTUNITY TO COMBINE REPAIR OPERATIONS FOR THE C-141 AFT COWL DOOR TO USE ONE (1) MECHANIC IN LIEU OF THE PRESENT TWO (2) (MANPSA).

¹²
10.24.1 Description of Current Operations

The current way of reworking the C-141. AFT Cowl Door, is to have one mechanic to tear down the old assembly and salvage the salvagable hardware and miscellaneous parts and another mechanic in another area to repair/rebuild the bonded honeycomb section of the door. (A third mechanic is also involved by removing the door from the cowl - in another area.)

After the bonded section is completed, it is transported back to the "Tear-Down" area and reassembled by the first mechanic (who is not bond certified).

¹²
10.24.2 Description of Current Process Problems

The current way of repairing the doors has no obvious problems with the exception of completion responsibility, and the excessive amount of flow time required between workers.

¹²
10.24.3 Description of New Process

The entire operation for repairing the door should be done in one area and the part not moved back and forth from one area to another. The "Tear-Down" mechanic should be trained and certified for bond operations.

¹²
10.24.4 Rationale Leading to Change

- . Eliminate duplicity of effort.
- . Decrease "Flow-Time".
- . Provide more trained workers.
- . Provide more versatile worker.

¹²
10.24.5 Estimated Cost Savings

At least one (1) full time mechanic will be released for other work.

Flow time will be increased at least by the time required for the part to flow between the areas which is usually 4-6 hours per door.

By certifying ALL workers for bonding, a more versatile utilization of the worker is possible who in turn is more capable of training others.

10.2¹²4.6 Implementation Cost/Schedule

This may be done immediately with a very little cost effect to implement.

10.28¹³ QUICK FIX OPPORTUNITY TO MAKE AVAILABLE COBALT-TIPPED DRILL BITS, OR EQUIVALENT, FOR MECHANIC'S USE FOR DRILLING OUT FASTENERS (MANPS).

10.28.1¹³ Description of Current Operations

The present lot of resharpened drill bits, especially the sizes normally used to drill out rivets and other type fasteners are not properly ground on center and the tips are softer than the normal quality of new drill bits.

10.28.2¹³ Description of Current Process Problems

These off-center and soft bits wander off-center when the fastener is drilled out sometimes enlarging the hole and requiring a backing strip, or making necessary the next size larger salvage rivet in the enlarged hole.

These drill bits are soft and consequently do not last - only a few holes - and they are dull.

10.28.3¹³ Description of New Process

Provide the Sheet Metal Mechanic with a better quality drill bit such as a Cobalt tipped bit, or equivalent, to be used on High-Value assemblies when drilling out rivets, other type fasteners such as lock bolts or blind rivets and bolts.

10.28.4¹³ Rationale Leading to Change

The current quality of resharpened drill bits is extremely poor, contributing to oversize and nonconforming holes, causing unnecessary work and much time lost.

Making available better quality drill bits for the mechanic's use, especially the sizes used to drill out fasteners will save time, money and provide a better quality product.

10.28.5¹³ Estimated Cost Savings

It is estimated that around 20 man hours are lost per unit every week trying to make quality work with these inferior quality drill bits.

Observation and interviews have indicated that most mechanics are not using the resharpened bits but are obtaining better quality drill bits from other areas such as the F-15 wing effort which is supplied with better quality bits.

10.28.6¹³ Implementation Cost/Schedule

Not available at this time.

Following are the Potential Improvements for Focus Studies.

10.A
~~10.3~~ DB

QUICK FIX OPPORTUNITY TO PROVIDE HEAVY CARDBOARD
RE-USABLE SHIPPING BOXES FOR SMALL/MEDIUM SIZE PARTS
(MANPS).

10.3.1 Description of Current Operations

Parts are currently being moved from one area to another by hand-carrying or by laying loose on a rolling hand cart while they are being transported.

10.3.2 Description of Current Process Problems

10.3.3 Description of New Process

Heavy cardboard, reusable boxes should be used to protect the smaller parts when they are transported from one area or backshop to another area. These are sometimes called "Banana Boxes" because they are about the same shape and construction as the boxes used to ship bananas. These boxes would be similar to the ones used in the tubing/cable shop to contain and transport parts.

10.3.4 Rationale Leading to Change

10.3.5 Estimated Cost Savings

Using these boxes with styrofoam and/or "bubble wrap" will minimize damage to parts being transported.

10.3.6 Implementation Cost/Schedule

10.B
of
~~10.7~~

QUICK FIX OPPORTUNITY TO REVIEW AND ALLOCATE SUFFICIENT AND DEDICATED WORK SPACE FOR EACH WORK STATION (HANPS).

10.7.1 Description of Current Operations

Much confusion exists now in certain areas because of the lack of dedicated and sufficient space for the mechanic and the work he/she is required to do. Traffic cross-flow is bad and in some instances there is no assigned or dedicated work space for the mechanic to do his/her assigned task.

10.7.2 Description of Current Process Problems

The work space for a given repair task must be adequate to allow the work to be performed in the most timely and cost effective manner.

10.7.3 Description of New Process

Each work station must be designed and space allotted to allow the mechanic to do his/her assigned task without interruption from people passing by, cross-flow traffic from fellow workers, insufficient space and confusion.

As a stop-gap measure, (before an in-depth facilities layout can be made), each work station must be identified and permanently marked so that the mechanic assigned to that work station may work with a minimum of interruptions. Rails or fences should be considered to outline the stations.

10.7.4 Rationale Leading to Change

Observation of several areas in Building 169, such as the areas for the petal doors and ailerons for the C-141, led to this present condition.

10.7.5 Estimated Cost Savings

Time will be saved and/or work efficiency will be increased along with the production rate.

10.7.6 Implementation Cost/Schedule

Implementation cost would involve about 16 man hours to lay-out and mark that stations. Equipment needed such as rails are assumed to be available. The time to implement would approximate two (2) weeks for each area from go-ahead.

10.C
DB
~~10.8~~

QUICK FIX OPPORTUNITY TO PUT MORE EMPHASIS ON QP4!
(MANPS).

10.8.1 Description of Current Operations

Some RCC repair units do not have an active QP4 team. Those that do are not allotted the necessary time to be effective - manpower seems to be the problem.

NOTE: QP4 is currently being revised and restructured. It is suggested that more recognition and prestige be given the group.

10.8.2 Description of Current Process Problems

10.8.3 Description of New Process

More emphasis should be placed on the "QP 4" team effort and to use these groups with greater visibility and recognition as problem solvers.

Long standing complicated problems have a greater chance of being solved when a QP4 team is active in the area.

10.8.4 Rationale Leading to Change

10.8.5 Estimated Cost Savings

- . More employee awareness and concern.
- . Better quality realized.
- . Better worker recognition and efficiency.
- . Money saved.

10.8.6 Implementation Cost/Schedule

10.D
DB
~~10.9~~

QUICK FIX OPPORTUNITY TO INCLUDE THE MANUFACTURING SUPERVISOR IN ALL TASK FORMATIONS WHEN QUALITY/ PRODUCTION WOULD BE DISCUSSED OR/AND DECISIONS MADE TO AFFECT SAME (MANPS).

10.9.1 Description of Current Operations

Decisions are sometimes made that affect the production effort or the quality of a repair unit without the Supervisor being told or asked to participate in the decision making process.

10.9.2 Description of Current Process Problems

10.9.3 Description of New Process

Better solutions to MANPS problems may be realized so that when a task force is formed, it is formed from individuals most knowledgeable and intimately concerned with a solution to the problem, such as the Production Supervisor if the problem involves the production effort; or the Tooling expert if the problem involves a tool change; and the Planner if ANY change is contemplated in the work sequence or planning. The task force should always be headed up by the Production Supervisor if the problem involves production or quality.

10.9.4 Rationale Leading to Change

10.9.5 Estimated Cost Savings

- . Better utilization of the Supervisors.
- . Better quality.
- . More Supervisor awareness.
- . More cooperation from all concerned.

10.9.6 Implementation Cost/Schedule

P.E. 10.12 QUICK FIX OPPORTUNITY TO EVALUATE CLEANLINESS CONDITION
IN WORK/STAGING AREA NEAR THE AUTOCLAVES IN BUILDING
169 (MANPSA).

10.12.1 Description of Current Operations

Most lay-up is done in the Lay-Up Room in Building 169 which is a controlled and compatible environment for the use of adhesives and bonding materials used in the manufacturing of MANPSA work.

Some small patches and repair work is done in the teardown areas and in the staging area of the autoclave. There is not as much concern or attention given to bonding conditions and cleanliness in this as there should be.

10.12.2 Description of Current Process Problems

10.12.3 Description of New Process

A study should be conducted to determine if the conditions are adverse and if a plastic curtain dropped from the ceiling would help the situation. The sanding, drilling and working of metals/composites should be moved further away from the area where adhesive bonding is being done.

10.12.4 Rationale Leading to Change

10.12.5 Estimated Cost Savings

The major benefit to isolating the bonding from the fabrication will be to create a somewhat controlled environment which a requirement to the use of structural adhesives.

10.12.6 Implementation Cost/Schedule

10.13

QUICK FIX OPPORTUNITY TO REVIEW SAFETY PRECAUTIONS IN THE USE OF METHYL-ETHYL-KETONE (MEK), DEPLETED URANIUM COUNTER-BALANCE WEIGHTS AND ASBESTOS CLAMPS USED IN BUILDING 603 ON THE C-141 WING LEADING EDGE (MANPS).

10.13.1 Description of Current Operations

Two safety situations are prevalent in the aileron repair and adjacent areas concerning: (1) The use of Methyl-Ethyl-Ketone, which should not be used. "Safety Solvents" are available and are not as toxic and just as effective as MEK; and (2) Inadequate marking and warning to the mechanics and handlers of the Depleted Uranium counterbalance weight used as the balance material for the weight.

The planners have addressed the problem of the depleted uranium with a vinyl cover but it is not used effectively.

10.13.2 Description of Current Process Problems

10.13.3 Description of New Process

The applicable T.O. lists all the precautions that must be taken to prevent undue exposure to the radioactivity of the material and the mechanics are aware of this. There is no awareness of the "heavy-metal" effects of ingesting ground depleted uranium powder or the fact that grinding or drilling causes sparking which would cause ignition. The Base Safety Engineer should address this problem.

10.13.4 Rationale Leading to Change

10.13.5 Estimated Cost Savings

Employee safety.

10.13.6 Implementation Cost/Schedule

P. 9
10.14 QUICK FIX OPPORTUNITY TO IMPLEMENT METHODOLOGY TO
ELIMINATE MISSING PETAL DOOR STRAKE PARTS (MANPSA).

10.14.1 Description of Current Operations

The Petal Doors arrive at WR-ALC to be inspected and repaired consistently missing the Strake which should accompany the door. This is an expensive group of parts! This is an expensive operation for every C-141 Petal Door to come in for repairs a NEW Strake has to be manufactured and shipped back out to stores!

Where are the missing strake parts? Who removes them from the Petal Door Assembly? By what authority are they removed? Records show that some of these parts have a value of \$20 to \$30 each and in many cases as many as twenty (20) parts are missing!

10.14.2 Description of Current Process Problems

10.14.3 Description of New Process

An investigation into this matter has been made and an employee was given a cash award for bringing this matter to the attention of his managers but no resolution to the problem has been effected as of this date.

10.14.4 Rationale Leading to Change

10.14.5 Estimated Cost Savings

(See Attachments.)

10.14.6 Implementation Cost/Schedule

10.16

10.16

QUICK FIX OPPORTUNITY TO USE LOCKHEAD "STATUS" TO DETERMINE LATEST DRAWING/EFFECTIVITY (MANPS).

10.16.1 Description of Current Operations

There seems to be a bit of confusion at WR-ALC as to how to determine the effectivity of a part or of a drawing revision. This is especially pertinent to the drawings and parts for the Lockheed C-130 and C-141 aircraft. When the Air Force bought these airplanes from Lockheed, they also bought the drawings and the drawing submittal system, which would be in accordance with the applicable MIL Specification for the drawing requirements.

10.16.2 Description of Current Process Problems

10.16.3 Description of New Process

It is possible that a phone call to "Status" at Lockheed each time could get an answer to a problem involving a part as to whether it is required on a particular Model or not.

"Status" could also be used to verify the latest drawing revision or Engineering Order (EO) change to a drawing.

10.16.4 Rationale Leading to Change

10.16.5 Estimated Cost Savings

- . Time saved.
- . Money saved.
- . More confidence in working with Lockheed drawings.

10.16.6 Implementation Cost/Schedule

P.T. 02.
~~10.18~~ QUICK FIX OPPORTUNITY TO NEED "WINDOW AREA" PLOT FOR F-15 RADOME REPAIR USE (MANPSD).

10.18.1 Description of Current Operations

There are approximately 150 F-15 Radomes in an "X" condition (a condition of maximum damage) which will require a maximum effort to repair in the near future for MANPSD. (Building 670).

10.18.2 Description of Current Process Problems

The F-15 repair T.O.'s do not give a "stay-out" or "window" area for the Radome to help guide the repair. Other T.O.'s such as for the C-130 Radomes give this information to establish repair limitations and help guide the mechanic making the repair.

10.18.3 Description of New Process

There is a need to establish the repair limitations for the F-15 Radomes. Hugh Darsey, (6)5374, MMFRB, Cognizent Engineer is working with the test range, (Building 675), people to derive information to define the repair limitations.

10.18.4 Rationale Leading to Change

In the event the repair limits are not defined it is probable that Radomes will be repaired and not be usable thereby wasting time, money, and effort.

10.18.5 Estimated Cost Savings

Cost savings not determinable, at this time.

10.18.6 Implementation Cost/Schedule

Not determinable at this time.

1000
Comment

10.20

10.3
013

QUICK FIX OPPORTUNITY TO MOVE F-15 CANOPY REPAIR EFFORT
OUT OF BUILDING 670 (MANPSD).

10.20.1 Description of Current Operations

The F-15 Canopy repair effort occupies only a small portion of Building 670 and the repair effort does not have sufficient space.

10.20.2 Description of Current Process Problems

10.20.3 Description of New Process

Additional space is currently needed and by moving the canopy effort out of the building more space will be available for the radomes.

The F-15 Canopy should be moved to an area closer to the sheet metal repair, Building 169.

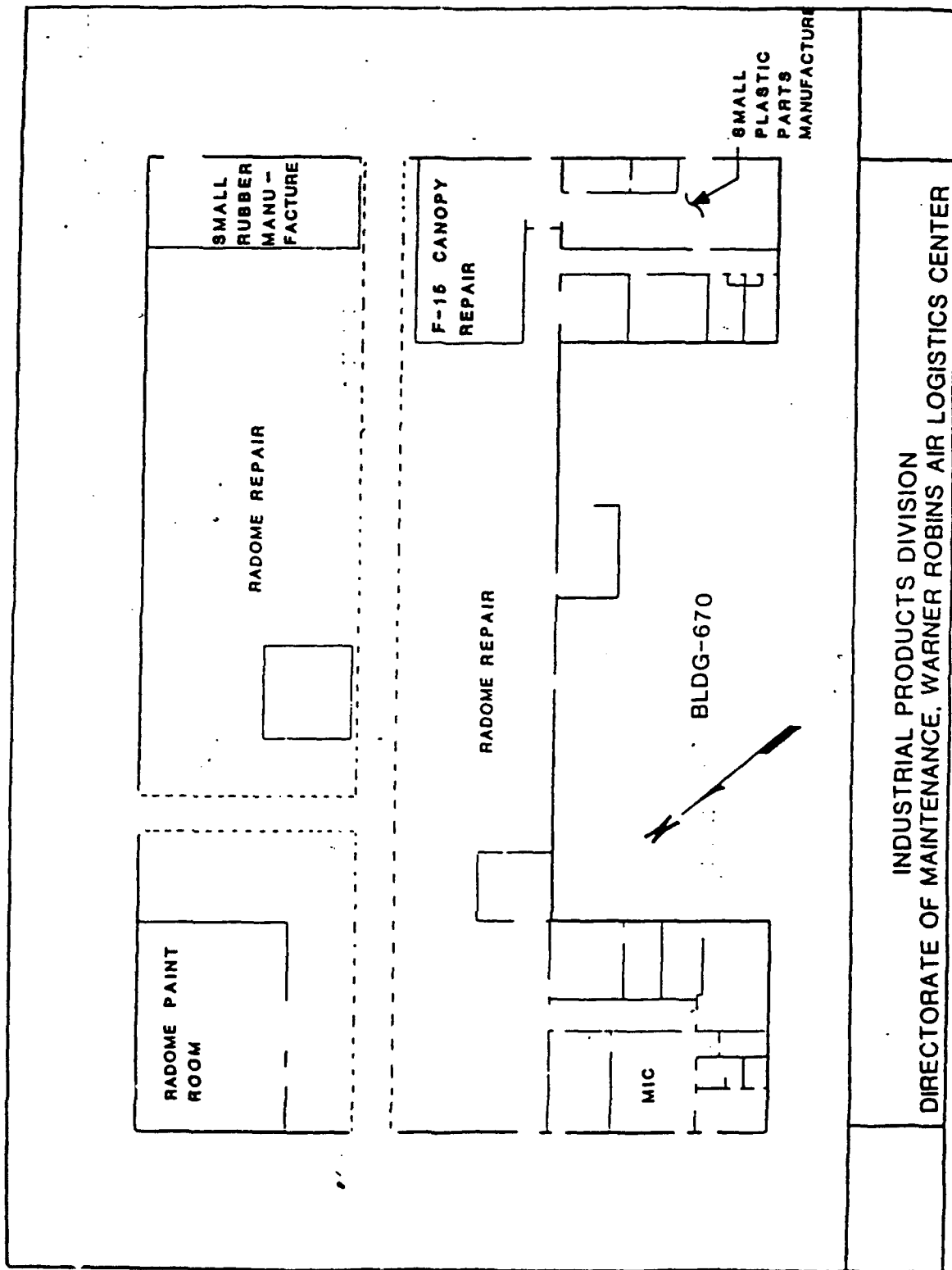
There is no GRID BOARD available to check the optical qualities of the transparencies when scratches are buffed out and the surface distorted.

10.20.4 Rationale Leading to Change

10.20.5 Estimated Cost Savings

Time will be saved and/or work efficiency will be increased and consequently the production rate increased. (See attached sketch.)

10.20.6 Implementation Cost/Schedule



INDUSTRIAL PRODUCTS DIVISION
DIRECTORATE OF MAINTENANCE, WARNER ROBINS AIR LOGISTICS CENTER

4002
Layout
03/07/1991
10.K

10.22

QUICK FIX OPPORTUNITY TO REMOVE C-130 LEADING EDGE
(UNUSED) JIGS FROM BUILDING 603 (MANPSD).

10.22.1 Description of Current Operations

There are several unused C-130 Leading Edge jigs stored in Building 603 that are occupying much needed space needed for 4 - 6 additional nozzle stations.

10.22.2 Description of Current Process Problems

10.22.3 Description of New Process

Remove these jigs from the building thereby allowing the C-141 Nozzle effort to be expanded, as planned.

10.22.4 Rationale Leading to Change

10.22.5 Estimated Cost Savings

Space is at a premium in Building 603 and this space will be used to increase production rate for the C-141 Nozzle effort.

10.22.6 Implementation Cost/Schedule

10.23

QUICK FIX OPPORTUNITY TO NEED BETTER/LARGER/CLEANER
TOILET FACILITY FOR THE WOMEN MECHANICS IN BUILDING
603 (HANPSD).

10.23.1 Description of Current Operations

The women's toilet in Building 603 has only one (1) commode for 6-8 women to use. Water stands in the general area of the toilet when it rains. The women have to go to adjacent buildings or either wait!

10.23.2 Description of Current Process Problems

10.23.3 Description of New Process

Provide better toilet facilities.

10.23.4 Rationale Leading to Change

10.23.5 Estimated Cost Savings

Increased worker comfort station and sanitary conditions.

10.23.6 Implementation Cost/Schedule

~~10.23~~

10.25.1 Description of Current Operations

10.25.2 Description of Current Process Problems

10.25.3 Description of New Process

10.25.4 Rationale Leading to Change

10.25.5 Estimated Cost Savings

10.25.6 Implementation Cost/Schedule

1000 1070
PAUL C. BEVAN'S COPY

NOTE*** THIS IS A CONFIRMATORY SUGGESTION.

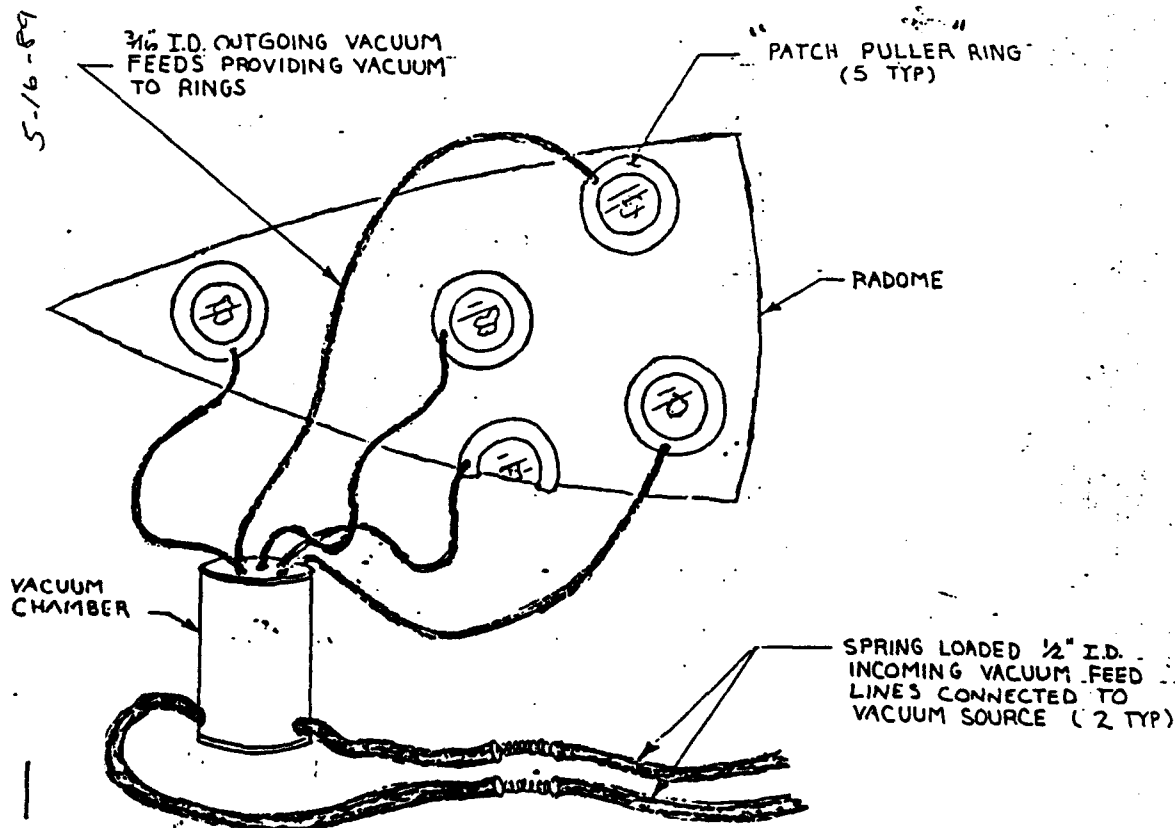
On 11-17-88, I discussed and demonstrated this concept in the presence of Jac Hambrick, David Turner, and Hugh Darsey. They were responding to an AFLC For 103 submitted by myself on 11-15-88. The 103 number is MANERS-8-558. I have attached a copy.

Problem: Present vacuum bag patching techniques are costly, both in labor and material. The government can reduce these costs.

Solution: I have prototyped and developed two systems that greatly reduce material costs and labor costs on the repair of fiberglass items. One system was designed and developed to be used on the F-15 radome. It will work on an aircraft that has a radome of the same configuration as the F-15 radome. After implementation of the system, 98% of labor cost and 95% of material costs will be saved in the patch set-up procedure. Approximately seven labor hours per F-15 radome will be saved. This system is also effective in spot patching on all types of fiberglass and on many fiberglass items DoD-wide. Some examples are the C-130 radome, C-141 radome, C-141 tail cone, C-130 hat dome, and C-141 hat dome.

Some benefits of the F-15 patch puller follow:

PAGE 1 OF 3 PAGES



1. Eliminates 98% of material used for patch set-up (tapes, spring, tacky tape).
2. Eliminates 95% of patch set-up material handling, application, and removal.
3. Eliminates any possibility of pulling up circs by eliminating adhesive tapes presently used.
4. Functions effectively over grid wires, copper foil tape, radar balancing tape, and oil- or fluid-contaminated surfaces where adhesive tapes now used encounter problems.
5. Works effectively on interior and exterior surfaces.
6. I have prototyped and developed the part and mold; no additional tooling needed.
7. Would be effective for field use in the form of an inexpensive kit. The kit would consist of cloth, resin, Mylar film, and patch puller ring. The system could be operated by a portable vacuum pump.
8. The system could be used throughout the Air Force on any aircraft having radome with a similar configuration.
9. The system could be used DoD-wide (Navy, Army, ANG, etc).
10. The system is effective in spot patching.
11. All components of the system are durable and reusable.

The second system I have developed operates off the same vacuum concept. I have developed a 2-inch-wide band of urethane that vacuums to the radome surface. The system incorporates the vacuum band, a dual vacuum feed, 1-inch masking tape, zinc chromate, and spring. One vacuum source will have a trap built into the line to allow for bleed-outs. Set up and operation is as follows:

1. Vacuum band down to face of radome operating off a straight line vacuum source (no trap). The band will surround the repair area.

2. Once in place, apply the zinc chromate to the outside face of the band.

NOTE: After the chromate has been applied to the vacuum band on the band's first use, the chromate will stay in place and require very little handling of the next several patches. Periodic reapplication of the chromate may be required to insure effectiveness of the device. The zinc chromate serves as an adhesive for alcohol sheet or Mylar film.

3. Next apply the spring with 2-inch pieces of 1-inch-wide masking tape just outside the repair area and within the vacuum band.

4. Attach the vacuum feed with the trap to this spring. This will allow for excess air resin to be bled from the patch. The system will now be ready for use.

5. Apply patch material to repair area (per TO 1-1-24).

6. Activate bleed-out vacuum and stretch Mylar sheet over the repair, adhering the sheet to the chromate. The patch is complete.

This method will reduce tape use by 90%. Labor required for patch set up and break down will be reduced by 70%. This will equate to an average of 6 labor hours saved per dome on the C-130 and C-141. I am in the process of making different sizes and shapes to accommodate different size and shape repairs. 1-1-24, pg 4-19, para 4-86 suggests that mechanics keep their repairs between 144 sq in and 324 sq in for best results. This is not always practical. I have developed a vacuum band that will allow patches of 500 sq in to be pulled. Based on the prototypes and the success of the system, pulling patches with areas of 1000 square inches and greater is realistic. The pullers are already applicable to 90% of the interior and exterior of the C-130 and C-141 radomes.

Some benefits of the vacuumized band follow:

1. Eliminates 70% of material handling in patch set-up on C-130 and C-141 radomes (approximately 6 hours per radome will be saved).
2. Eliminates 90% of tape used during patch set-up.
3. Functions effectively over contaminated surfaces where tape may lose its adhesion.
4. Works effectively on interior and exterior surfaces.
5. Would be applicable DoD-wide.
6. The vacuumized band is reusable and very durable.
7. Can be applied to numerous fiberglass items.

10.26

QUICK FIX OPPORTUNITY TO ENCOURAGE SUGGESTIONS LIKE WENDELL PITTMAN'S INVESTIGATION AND PERSISTENCE IN HIS INVESTIGATION OF MISSING PETAL DOOR STRAKE PARTS. CONTINUE INVESTIGATION TO ELIMINATE MISSING PETAL DOOR STRAKE PARTS (MANPSA).

10.26.1 Description of Current Operations

The Petal Doors arrive at WR-ALC to be inspected and repaired consistently missing the strake which should accompany the door. This is an expensive group of parts! This is an expensive operation for every C-141 Petal Door to come in for repairs a NEW strake has to be manufactured and shipped back out to stores!

Where are the missing strake parts? Who removes them from the Petal Door Assembly? By what authority are they removed? Records show that some of these parts have a value of \$20 to \$30 each and in many cases as many as twenty (20) parts are missing!

10.26.2 Description of Current Process Problems

10.26.3 Description of New Process

An investigation into this matter has been made and an employee was given a cash award for bringing this matter to the attention of his managers but no resolution to the problem has been effected as of this date. (See Attachment.)

10.26.4 Rationale Leading to Change

10.26.5 Estimated Cost Savings

(See Attachment.)

10.26.6 Implementation Cost/Schedule

THIS IS A COPY FROM THE "ORIGINAL"

TO: ALC/DPF/Donna Layfield
FROM: Wendell T. Pittman (926-4812)
DATE:
REF.: Reopen and Reevaluate Suggestion #863055

Ms. Layfield:

I would like to have this suggestion re-opened and re-evaluated.

I have been trying to get someone to realize that the Government could have been saving money since 1984. Nothing has seemed to have any effect.

The latter part of 1987 I contacted the Fraud Waste and Abuse Division and they checked into the matter. After an inquiry and finding that on a lot that Petal Doors coming to Depot Maintenance are stored on over half the doors. Out of 22 doors, 12 were minus strakes. If I remember right they had the suggestion re-submitted and it was further implemented by on through the General.

Some time around the first of the year I was instructed that a \$250.00 settlement could be made on the suggestion or a \$100.00 award would be paid and the suggestion would be further evaluated. After a period of time I was told that the implementation process had been completed and that the personnel in the field could not or would not comply with the directives so therefore my suggestion warranted no further compensation.

On the 11th of December, 1980, the doors were numbered and logged coming into the shop. From then until 17 August 1984 some of the doors were marked with or without strakes. I wasn't there all this period of time so I can't verify that everything was logged. But I can authenticate the validity of these facts. From Door #819 thru Door #1131 there were 96 doors sent to Depot Maintenance minus strake assemblies. At approximately 3,000.00 per strake this was a loss of 288 thousand dollars. From 17 August 1984 through January 1, 1988 I have no accurate count as to missing strakes except for the fact that out of even 20 doors 12 were missing strakes. Since my suggestion was implemented, there has been a drastic change from January 1988. July 15, 1988 the Petal Door shop has been delivered 34 doors for repair.

Page Two

Out of these 34 doors only 3 have been minus strake. So as you can see this has been a tremendous reduction in lost strakes since my suggestion was put in force. Since 1981 my guess would be that over one half million dollars have been lost due careless and unattention. From 12 out of 20 doors missing strakes in the latter part of 1987 to 3 out of 34 door missing strakes should warrant a monetary re-evaluation. If you would please look into this matter for me.

Thanking you in advance,

Wendell T. Pittman
MANPSA/WR-ALC WRAFB/926-4812

cc: Shirley L. Wade, Manager
Air Force Management
Engineering Agency
Randolph AFB, Texas

Honorable Sam Nunn
U. S. Senate
Washington, D.C.

51454A

Left Hand Strake Assembly

1560009466505	3F40353	279	\$132.49
1560009466503	"	281	78.92
1560009466501	"	283	148.21
1560004656499	"	285	204.99
1560004653971JH	"	141	34.51
1560001823974JH	"	143	24.07
1560004605362JH	"	145	37.07
1560004653418JH	"	147	46.16
1560004653969JH	"	243	23.71
1560004600716JH	"	149	91.00
1560004603420JH	"	151	98.68
1560004660743JH	"	153	90.10
1560004653977JH	"	269	49.18
1560004907654JH	"	199	92.53
1560004907656JH	"	201	92.61
1560004907657JH	"	203	49.75
1560004907667JH	"	257	60.77
1560004907670JH	"	271	17.63

51455A

Right Hand Strake Assembly

1560009466504	3F40353	280	\$ 94.36
1560009466502	"	282	109.15
1560009466500	"	284	86.70
1560009466508	"	286	189.30
1560001825369JH	"	146	59.13
1560004653973JH	"	142	35.11
1560002243239JH	"	148	51.91
1560004653975JH	"	144	29.81
1560004653968JH	"	244	25.68
1560P0775322065	"	258	57.78
1560004603419JH	"	150	77.39
1560P0949672065	"	152	175.93
1560004603421JH	"	154	78.92
1560004653981JH	"	270	32.69
1560004657655JH	"	200	25.77
1560004907658JH	"	204	46.40
1560004907669JH	"	258	57.36
1560004907671JH	"	272	82.09
1560P077532F	3F40352	228	83.62

10:00
10.27

QUICK FIX OPPORTUNITY TO MAKE USE OF AND ASSIGN MORE
MANUFACTURING RESPONSIBILITY TO THE PLANNING SECTION
FOR ALL MANUFACTURING/ENGINEERING COORDINATION
(MANPS).

10.27.1 Description of Current Operations

When the manufacturing people (mechanics) have problems pertaining to the engineering and other data requirements for a particular unit being repaired they most often contact the technical support people, such as the manufacturing, tooling, facilities, or materials engineer in a DIRECT contact manner.

Usually the mechanics are not as well-versed as the planner as to the overall part requirement and design intent and consequently should take the problem through the planner for him to make the contact.

10.27.2 Description of Current Process Problems

10.27.3 Description of New Process

Make better use of the Planning Section to help solve ALL problems involving the technical implementation of the Work Control Document (WCD).

10.27.4 Rationale Leading to Change

10.27.5 Estimated Cost Savings

When the planner is contacted he will be in a better position to:

- . Assist the mechanic to prevent work stoppages.
- . Revise the WCD, when required.
- . Coordinate the production effort.
- . Influence the standard hour requirement.
- . Help solve tooling problems and requirements.
- . Etc.

10.27.6 Implementation Cost/Schedule

10.29

QUICK FIX OPPORTUNITY TO STUDY TO OBTAIN BETTER QUALITY/DELIVERY FOR THE PETAL DOOR INNER/OUTER SKIN ASSEMBLIES FROM THE NEW SUBCONTRACTOR (MANPSA).

10.29.1 Description of Current Operations

The new inner skin and outer skin bonded assemblies for the Petal Door, which are made off-site at a Sub-Contractor, require inspection and repair work on the new assemblies before they are acceptable to be used. These new skins are sometime dented, scratched, have voids, have delaminations, etc. that require time and effort to fix before they can be used as acceptable parts. Also, the potted location for the attachment fasteners require re-potting in the honeycomb skin area due to not falling within the potted area. A cursory investigation shows that an increase in the potting area diameter from about one-half inch to about one inch could possibly eliminate the problem of re-potting. Most of the damage problems aforementioned are the fault of WR-ALC but the voids, delaminations, or core damage are most likely the fault of the Sub-Contractor.

10.29.2 Description of Current Process Problems

10.29.3 Description of New Process

Redesign the Petal Door Assembly jig to allow a greater amount of work to be performed in the jig without having to remove the parts so often. At the present time the skin assemblies and the frame parts require removal and replacement approximately six (6) times for each door. This could be reduced by adding a "Box-Jig" adaptation that would allow the skins to be folded back out of the way rather than removing the skins and the frame from the jig each time. More jigs are required for the current workload of Petal Doors.

10.29.4 Rationale Leading to Change

10.29.5 Estimated Cost Savings

An investigation team should be formed to ascertain how much time and money is being spent to rework these "New" Inner Skin and Outer Skin Assemblies and visit the new Subcontractor, if necessary.

A cursory investigation has also discovered that these skin assemblies frequently are not made to the correct contour! After reviewing the bonding capabilities and the autoclave facilities MDMSC has concluded that both of these skin assemblies should be made at WR-ALC!

10.29.6 Implementation Cost/Schedule

10.30 ^{10.30} ^Q ^{RB} QUICK FIX OPPORTUNITY TO MAKE BETTER USE OF QUALITY PEOPLE TO HELP SOLVE PROBLEMS RELATED TO THE REPAIR EFFORTS (MANPS).

10.30.1 Description of Current Operations

The Supervisors and their Designees often do not call the Quality Assurance Specialist to help solve problems arising from the repair effort.

10.30.2 Description of Current Process Problems

10.30.3 Description of New Process

The Quality Assurance Specialist should be used by issuing a Request for Quality Assistance (RQA) (AFLC Form 354).

The Quality Assurance Specialist will use the skills and facilities available to develop valid solutions or recommendations on all RQAs. Examples include: Quality Engineering, Methods Improvement Laboratory, chemical or materials laboratories, and subject matter specialists from other divisions or directorates. All corrective actions will be thoroughly coordinated with all activities having a primary or collateral responsibility.

10.30.4 Rationale Leading to Change

10.30.5 Estimated Cost Savings

Time will be reduced and/or work efficiency will be increased and as a result the production rate increased. (See attached copy of MAOI 74-2.)

10.30.6 Implementation Cost/Schedule

23 June 1988

Quality and Reliability Assurance

REQUEST FOR QUALITY ASSISTANCE (RQA)

This MAOI outlines procedures for submitting a Request for Quality Assistance (RQA). This instruction applies to all employees and organizations in the Directorate of Maintenance (MA).

1. **GENERAL.** The purpose of the RQA program is to provide all employees with a medium to seek solutions for a known or suspected problem on any product, process, system, or procedure that may adversely impact the quality of products or services produced by this activity.

*2. **REQUIREMENTS.** AFLC Form 354, Request for Quality Assistance (RQA), is a means of initiating requests to the Product Quality and Reliability Division (MAQ) when initial investigative actions have failed to remedy the problem. Anyone who recognizes or suspects a problem may initiate an RQA. The RQA will not be used for resolution of personal grievances, subjects covered by the Master Labor Agreement, matters under the jurisdiction of 40-series regulations, or items covered by other programs (component failures-use QDR, tech data errors-use AFTO Form 22, etc).

3. **PROCEDURES:**

a. Individuals requesting Quality Assistance will:

(1) Prepare AFLC Form 354 when a suspected or known deficiency is compromising the quality of a product produced by MA.

*(2) Complete all blanks of Part I of AFLC Form 354 and forward to the applicable Quality Branch (MAQ). Routing through section and/or branch office is at the option of the applicable division. The form may be handscripted.

(3) State the deficient condition in sufficient detail to aid investigation; that is, include attachments, national stock numbers (NSNs), technical orders (TOs), etc.

(4) Assist Quality Assurance Specialist during problem review.

b. Applicable Quality Branch (MAQ) will:

(1) Maintain an RQA log book reflecting the RQA control number, date request received, subject, initiator's name, office symbol, suspense date, and date project closed.

(a) The control number will be comprised of the Quality Branch symbol, the last two digits of the year, and the numerical sequence of the project (for example, MAQB-86-1).

(b) A suspense date of not more than 25 workdays will be established.

(2) Contact the originator of the RQA to obtain additional information as required.

(3) Perform a comprehensive evaluation concerning the problem identified through the RQA.

Supersedes MAOI 74-2, 18 Apr 86.

OPR: MAQSS (Sue Pierce)

Editor: Wanda B. Wood

Distribution: F,

X: AUDGN, MMIMF-Q, 2953 ABG/DAP.....1 ea

23 June 1988

(4) Coordinate all findings/recommendations with responsible supervisors.

(5) Provide the initiator a thorough report, with recommendations, if applicable, within established suspense date. Also, provide copies to other organizations with an interest in or collateral responsibility for the problem or for actions associated with the solutions or recommendations. If evaluation cannot be completed within required suspense date, provide initiator with an interim status report.

(6) Initiate requests to effect changes to technical orders, regulations, or other directives when needed.

(7) Provide all recipients of the initial report with copies of all follow-on correspondence.

(8) Maintain a file on completed RQA actions in accordance with MAQOI 74-1.

c. The Quality Assurance Specialist will use the skills and facilities available to develop valid solutions or recommendations on all RQAs. Examples include: Quality Engineering, Methods Improvement Laboratory, chemical or materials laboratories, and subject matter specialists from other divisions or directorates. All corrective actions will be thoroughly coordinated with all activities having a primary or collateral responsibility.

d. Applicable personnel shall assist the Quality Assurance Specialist during evaluation process and assure corrective actions are taken when a problem is identified to their particular area.

FOR THE DIRECTOR

Walter R. Peacock, Jr.
WALTER R. PEACOCK, Jr., Col. USAF
Chief, Resources Management Division
Directorate of Maintenance

1 Attachment
AFLC Form 354 (Sample)

23 June 1982

3

REQUEST FOR QUALITY ASSISTANCE (RQA)			
TO MAQ <u>N</u>	FROM (Name, Organization, Extension) Jane Doe/MANPM/3491		DATE 4 Apr 86
SUBJECT (System/Item/Process)			
PROBLEM/CONDITION/RECOMMENDATION (If needed, continue on reverse. Do not write below this block.) (Define problem in sufficient detail, state previous actions taken to resolve problem, attach all pertinent information - drawings, previous correspondence, etc.)			
SIGNATURE (Signature of Initiator)			
REPORT			
TO MANPM	FROM MAQ <u>NM</u>	CONTROL NUMBER MAQN-86-3	DATE 14 Apr 86
BENEFITS DERIVED/EXPECTED (if applicable) (Provide findings, recommendations, action taken, and benefits derived.)			
CORRECTIVE ACTION ON THIS REPORT IS <input checked="" type="checkbox"/> COMPLETE <input type="checkbox"/> PENDING <input type="checkbox"/> NOT REQUIRED			MAQ MANHOURS 14 hrs
SIGNATURE (Section Level)		ORGANIZATION MAQNM	EXTENSION 2441

AFLC FORM 354
JAN 86

PREVIOUS EDITION WILL BE USED

SAMPLE - NOT TO BE REPRODUCED.

OVERALL STATUS OR CONCERNS

BILL RICH 5-24-89

- WARNER-ROBINS ALC IS A NICE PLACE TO WORK, GOOD PLACES TO EAT AND THE WEATHER IS VERY GOOD.
- WR-ALC IS CONVENIENT TO OUR MOTEL AND TO SHOPPING.
- MOST EMPLOYEES ARE VERY COOPERATIVE WITH THE T. I. EFFORT.
- THE WR-ALC PEOPLE WERE NOT ADEQUATELY EDUCATED AND PREPARED FOR OUR VISIT.
- COOPERATION WITH THE PLANNERS, QUALITY AND SCHEDULERS HAS BEEN EXCELLENT. THE SCHEDULERS ASSISTED US WITH OUR "FLOW-CHART" EFFORT.
- OUR PORTION OF THE T. I. SITE EFFORT WAS WELL ORGANIZED AND EFFECIENT.
- ALL RCC "PROCESS CHARACTERIZATION" DATA COLLECTION WENT EXTREMELY WELL.
- WE HAD GOOD ACCESS TO HISTORICAL RECORDS, QP4 RECORDS, ETC.
- WE ATTENDED SEVERAL QP4 MEETINGS AS OBSERVERS.

- ST. LOUIS SENT US A LOT OF FORMS THAT WE HAD NO REAL USE FOR!
- WR-ALC REPAIR WORK UNITS ARE PROBABLY MORE DIFFICULT TO REPAIR THAN THE AVERAGE.
- INTERCHANGE OF INFORMATION WITH OUR WR-ALC COUNTERPARTS NOT TOO GOOD ON OCCASION.
- ALL PREVIOUS (1988) COLLECTED DATA SUCH AS "BACK-SHOP" FLOW TIME, PROCESS FLOW TIME, ETC. WAS REVIEWED IN DETAIL AND CORRECTED WHERE NECESSARY.
- WE RECOVERED FROM A "TWO-WEEK-BEHIND SCHEDULE" TO AN APPROXIMATELY "ON-TIME-SCHEDULE."
- WE ORIGINATED APPROXIMATELY 50 "QUICK-FIX" ITEMS.
- OUR DATA VALIDATION PROCESS WENT EXTREMELY WELL.

BILL RICH
5-24-89

6:56 FRIDAY, FEBRUARY 24, 1989 21

PART OPERATION SUMMARY

ALC: WARNER ROBBINS RCC: MANPSA SHEETMETAL, ADHESIVE BONDING
 PN: 3F40455-105 NSN: PCN: 51454A WCD: MB030B WCD DATE: 88064
 OPERATION: ZPRT PRIMARY OPERATION TYPE: INS MATERIAL TYPE: AL
 SAMPLE SIZE: 19 MISSING FLOWTIMES: 0 END ITEMS: OUTLIERS DELETED: 0

[illegible]

HISTORICAL DATA

ACTUAL FREQ	RELATIVE FREQUENCY										DISTRIBUTION	PARAMETERS	D VALUE	D ALPHA
	0	10	20	30	40	50	60	70	80	90					100
0														
10												29.0	78.0	0.212
20												29.0	63.0	0.131
30		**										59.1	14.3	0.091
40		**												1.000
50		**										61.9		0.344
60		*****												
70		*****												
80		*****												
90		*****												
100		*****												
OCCURRENCE FACTOR:												OCCURRENCES:	19	
DISTRIBUTION OF CHOICE:												NORMAL		

SAS

6:56 FRIDAY, FEBRUARY 24, 1989 11

PART OPERATION SUMMARY

ALC: WARNER ROBBINS RCC: MANPOC

PN: 3F40455-105

NSN:

PCN: 51454A

WCD: MBC30B WCD DATE: 88064

OPERATION: ZPRT

MISSING FLOWTIMES:

BACKSHOP OPERATION TYPE:

MATERIAL TYPE:

WCD: MBC30B WCD DATE: 88064

SAMPLE SIZE:

END ITEMS:

OUTLIERS DELETED:

MATERIAL TYPE:

WCD: MBC30B WCD DATE: 88064

----- MANPOWER REQUIRED -----

----- EQUIPMENT REQUIRED -----

WCD: MBC30B WCD DATE: 88064

SKILL QTY FRACTION HOURS

CODE CATEGORY QTY FRACTION HOURS

WCD: MBC30B WCD DATE: 88064

HISTORICAL DATA

ACTUAL FREQ 0 10 20 30 40 50 60 70 80 90 100

DISTRIBUTION

PARAMETERS

D VALUE ALPHA

UNIFORM
TRIANGULAR
NORMAL
LOGNORMAL
EXPONENTIAL

OCCURRENCE FACTOR: . OCCURRENCES:

DISTRIBUTION OF CHOICE:

>= 0

SAS

PART OPERATION SUMMARY

6:56 FRIDAY, FEBRUARY 24, 1989 12

ALC: WARNER ROBBINS RCC: MANPSA SHEETMETAL, ADHESIVE BONDING
 NSN:
 PCN: 51454A WCD: MBD30B WCD DATE: 88064
 PN: 3F40406-101
 OPERATION: ZPRT
 SAMPLE SIZE: 10
 PRIMARY OPERATION TYPE: PROC MATERIAL TYPE: AL
 MISSING FLOWTIMES: 0 END ITEMS: OUTLIERS DELETED: 0

----- MANPOWER REQUIRED ----- EQUIPMENT REQUIRED -----
 SKILL QTY FRACTION HOURS CODE CATEGORY QTY FRACTION HOURS BATCH MIN MAX

HISTORICAL DATA

ACTUAL FREQ	0	10	20	30	40	50	60	70	80	90	100	DISTRIBUTION	PARAMETERS	D VALUE	D ALPHA
0	*****											UNIFORM	0.0	58.0	0.632
5	0	****										TRIANGULAR	0.0	58.0	0.569
10	10											NORMAL	10.6	19.6	0.341
15	0											LOGNORMAL	10.6	19.6	0.057
20	0											EXPONENTIAL	11.4		0.440
25	0														0.15
30	10	****													1.00
35	0														0.04
40	0														
45	0														
50	10	****													

OCCURRENCE FACTOR: OCCURRENCES: 10
 DISTRIBUTION OF CHOICE: LOGNORMAL

FACTORS

OPERATION: ZPRT
SAMPLE SIZE: .
MISSING FLOWTIMES: .
BACKSHOP OPERATION TYPE: MATERIAL TYPE:
END ITEMS: . OUTLIERS DELETED: .

HISTORICAL DATA

ACTUAL FREQ	RELATIVE FREQUENCY											DISTRIBUTION	PARAMETERS	D VALUE	D ALPHA
	0	10	20	30	40	50	60	70	80	90	100				
0	UNIFORM	.	.	.
0	TRIANGULAR	.	.	.
0	NORMAL	.	.	.
0	LOGNORMAL	.	.	.
0	EXPONENTIAL	.	.	.

OCCURRENCE FACTOR: . OCCURRENCES:

DISTRIBUTION OF CHOICE:

ALC: WARNER ROBBINS
RCC: MANPDA

PN: 3F40455-105

OPERATION: ZPRT
SAMPLE SIZE: .

MSN:

MISSING FLOWTIMES:

BACKSHOP

TION TYPE:

ON TYPE:

21

SERIAL TYPE:

WCD DATE: 88064

REQUIRED -----

1

5 3 1

47100

DELETED:

---	TIME	---	HOURS
FRACTION			
0.000	0.000	0.000	0.000
0.001	0.001	0.001	0.001
0.002	0.002	0.002	0.002
0.003	0.003	0.003	0.003
0.004	0.004	0.004	0.004
0.005	0.005	0.005	0.005
0.006	0.006	0.006	0.006
0.007	0.007	0.007	0.007
0.008	0.008	0.008	0.008
0.009	0.009	0.009	0.009
0.010	0.010	0.010	0.010
0.011	0.011	0.011	0.011
0.012	0.012	0.012	0.012
0.013	0.013	0.013	0.013
0.014	0.014	0.014	0.014
0.015	0.015	0.015	0.015
0.016	0.016	0.016	0.016
0.017	0.017	0.017	0.017
0.018	0.018	0.018	0.018
0.019	0.019	0.019	0.019
0.020	0.020	0.020	0.020
0.021	0.021	0.021	0.021
0.022	0.022	0.022	0.022
0.023	0.023	0.023	0.023
0.024	0.024	0.024	0.024
0.025	0.025	0.025	0.025
0.026	0.026	0.026	0.026
0.027	0.027	0.027	0.027
0.028	0.028	0.028	0.028
0.029	0.029	0.029	0.029
0.030	0.030	0.030	0.030
0.031	0.031	0.031	0.031
0.032	0.032	0.032	0.032
0.033	0.033	0.033	0.033
0.034	0.034	0.034	0.034
0.035	0.035	0.035	0.035
0.036	0.036	0.036	0.036
0.037	0.037	0.037	0.037
0.038	0.038	0.038	0.038
0.039	0.039	0.039	0.039
0.040	0.040	0.040	0.040
0.041	0.041	0.041	0.041
0.042	0.042	0.042	0.042
0.043	0.043	0.043	0.043
0.044	0.044	0.044	0.044
0.045	0.045	0.045	0.045
0.046	0.046	0.046	0.046
0.047	0.047	0.047	0.047
0.048	0.048	0.048	0.048
0.049	0.049	0.049	0.049
0.050	0.050	0.050	0.050
0.051	0.051	0.051	0.051
0.052	0.052	0.052	0.052
0.053	0.053	0.053	0.053
0.054	0.054	0.054	0.054
0.055	0.055	0.055	0.055
0.056	0.056	0.056	0.056
0.057	0.057	0.057	0.057
0.058	0.058	0.058	0.058
0.059	0.059	0.059	0.059
0.060	0.060	0.060	0.060
0.061	0.061	0.061	0.061
0.062	0.062	0.062	0.062
0.063	0.063	0.063	0.063
0.064	0.064	0.064	0.064
0.065	0.065	0.065	0.065
0.066	0.066	0.066	0.066
0.067	0.067	0.067	0.067
0.068	0.068	0.068	0.068
0.069	0.069	0.069	0.069
0.070	0.070	0.070	0.070
0.071	0.071	0.071	0.071
0.072	0.072	0.072	0.072
0.073	0.073	0.073	0.073
0.074	0.074	0.074	0.074
0.075	0.075	0.075	0.075
0.076	0.076	0.076	0.076
0.077	0.077	0.077	0.077
0.078	0.078	0.078	0

CATEC

----- EQ3

EQUIPMENT

REQUIRED --- TIME

BATCH

HISTORICAL DATA

ACTUAL FREQ	0	10	20	30	40	50	60	70
0								

001 06 08

DISTRIBUTION

PARAMETERS

**D
ALPHA**

UNIFORM
TRIANGULAR
NORMAL
LOGNORMAL
EXPONENTIAL

.....

OCURRENCE FACTOR: .
DISTRIBUTION OF CHOICE:

OCCURRENCES:

DISTRIBUTION OF CHOICE:

SAS

6:56 FRIDAY, FEBRUARY 24, 1989 15

PART OPERATION SUMMARY

ALC: WARNER ROBBINS RCC: MANPSB SHEETMETAL, SHEETMETAL MANUFACTURING
PN: 3F40455-105 NSN: PCN: J-1454A WCD: MBG30B WCD DATE: 88064
OPERATION: ZPRT BACKSHOP OPERATION TYPE: MATERIAL TYPE:
SAMPLE SIZE: MISSING FLOWTIMES: END ITEMS: OUTLIERS DELETED:

----- MANPOWER REQUIRED ----- EQUIPMENT REQUIRED -----
SKILL QTY FRACTION HOURS CODE CATEGORY QTY FRACTION HOURS BATCH
MIN MAX

HISTORICAL DATA

ACTUAL FREQ	0	10	20	30	40	50	60	70	80	90	100	DISTRIBUTION	PARAMETERS	D VALUE	D ALPHA
0	UNIFORM	.	.	.
0	TRIANGULAR	.	.	.
0	NORMAL	.	.	.
0	LOGNORMAL	.	.	.
0	EXPONENTIAL	.	.	.
0
0
0
0
0
0

OCCURRENCE FACTOR: . OCCURRENCES: .
DISTRIBUTION OF CHOICE:

SAS

6:56 FRIDAY, FEBRUARY 24, 1989 16

PART OPERATION SUMMARY

PN: 3F40455-1G5
 ALC: WARNER ROBBINS
 RCC: MANPSA
 SHEETMETAL, ADHESIVE BONDING
 NSN:
 PCN: 51454A
 WCD: MBH30B
 WCD DATE: 88064
 OPERATION: ZPRT
 PRIMARY OPERATION TYPE: PROC MATERIAL TYPE: AL
 SAMPLE SIZE: 12 MISSING FLOWTIMES: 0 END ITEMS: OUTLIERS DELETED: 0

----- MANPOWER REQUIRED -----
 SKILL QTY FRACTION HOURS
 ----- TIME -----
 EQUIPMENT REQUIRED
 ----- TIME -----
 CATEGORY QTY FRACTION HOURS
 BATCH MIN MAX

HISTORICAL DATA

ACTUAL FREQ	0	10	20	30	40	50	60	70	80	90	100	DISTRIBUTION	PARAMETERS	D VALUE	D ALPHA	
0	0											UNIFORM	6.0	52.0	0.183	1.00
5	17	*****										TRIANGULAR	6.0	42.5	0.348	0.09
10	8	***										NORMAL	26.5	15.7	0.155	1.00
15	17	*****										LOGNORMAL			1.000	1.00
20	0											EXPONENTIAL	28.0		0.150	1.00
25	25	*****														
30	0															
35	0															
40	25	*****														
45	0															
>=50	8	***														

OCCURRENCE FACTOR: . OCCURRENCES: 12
 DISTRIBUTION OF CHOICE: EXPONENTIAL

SAS

6:56 FRIDAY, FEBRUARY 24, 1989 17

PART OPERATION SUMMARY

ALC: WARNER ROBBINS RCC: MANPDC

PN: 3F40455-105

PCN: 51454A

WCD: MBI30B WCD DATE: 88064

OPERATION: ZPRT
SAMPLE SIZE: 11

BACKSHOP OPERATION TYPE:
MISSING FLOWTIMES: 0

MATERIAL TYPE:
OUTLIERS DELETED: 0

----- MANPOWER REQUIRED -----

----- EQUIPMENT REQUIRED -----

SKILL	QTY	FRACTION	TIME	HOURS	CODE	CATEGORY	QTY	FRACTION	TIME	HOURS	BATCH	MIN	MAX
HISTORICAL DATA													

ACTUAL FREQ	RELATIVE FREQUENCY											D VALUE	D ALPHA
	0	10	20	30	40	50	60	70	80	90	100		
0	36	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
35	9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
40	18	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
45	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

OCCURRENCE FACTOR: 11

DISTRIBUTION OF CHOICE: EXPONENTIAL

SAS

6:56 FRIDAY, FEBRUARY 24, 1989 18

PART OPERATION SUMMARY

PN: 3F40455-103
 OPERATION: ZPRT
 SAMPLE SIZE: 13
 ALC: WARNER ROBBINS
 RCC: MANPSA
 SHEETMETAL, ADHESIVE BONDING
 NSN:
 PCN: S1454A
 WCD: MBJ30B
 WCD DATE: 88064
 PRIMARY
 MISSING FLOWTIMES: 0
 END ITEMS:
 OPERATION TYPE: PROC
 MATERIAL TYPE: AL
 OUTLIERS DELETED: 0

----- MANPOWER REQUIRED -----
 SKILL QTY FRACTION TIME EQUIPMENT REQUIRED TIME BATCH
 MIN MAX

HISTORICAL DATA

ACTUAL	0	10	20	30	40	50	60	70	80	90	100	DISTRIBUTION	PARAMETERS	D VALUE	D ALPHA
FREQ	46	15	0	0	0	0	0	0	0	0	0	UNIFORM	0 0	0.413	0.02
0	10	20	30	40	50	60	70	80	90	100	100	TRIANGULAR	0 0	0.381	0.04
10	20	30	40	50	60	70	80	90	100	100	100	NORMAL	23.2 25.9	0.246	1.00
20	30	40	50	60	70	80	90	100	100	100	100	LOGNORMAL	23.2 25.9	0.124	1.00
30	40	50	60	70	80	90	100	100	100	100	100	EXPONENTIAL	24.5	0.277	1.00
40	50	60	70	80	90	100	100	100	100	100	100				
50	60	70	80	90	100	100	100	100	100	100	100				
60	70	80	90	100	100	100	100	100	100	100	100				
70	80	90	100	100	100	100	100	100	100	100	100				
80	90	100	100	100	100	100	100	100	100	100	100				
90	100	100	100	100	100	100	100	100	100	100	100				
>=100	0	0	0	0	0	0	0	0	0	0	0				

OCCURRENCE FACTOR: 13
 DISTRIBUTION OF CHOICE: LOGNORMAL

SAS

6:56 FRIDAY, FEBRUARY 24, 1989 19

PART OPERATION SUMMARY

ALC: WARNER ROBBINS RCC: MANPSA SHEETMETAL, ADHESIVE BONDING
 NSN: 51454A PCN: 51454A WCD: MBO308 WCD DATE: 88064
 PN: 3F40455-105
 OPERATION: ZPRT
 SAMPLE SIZE:

MISSING FLOWTIMES: PRIMARY OPERATION TYPE: INS MATERIAL TYPE: AL
 END ITEMS: OUTLIERS DELETED:

----- MANPOWER REQUIRED ----- EQUIPMENT REQUIRED -----
 SKILL QTY FRACTION HOURS CODE CATEGORY QTY FRACTION HOURS BATCH MIN MAX

HISTORICAL DATA

ACTUAL FREQ	0	10	20	30	40	50	60	70	80	90	100	DISTRIBUTION	PARAMETERS	D VALUE	D ALPHA
0	UNIFORM	.	.	.
0	TRIANGULAR	.	.	.
0	NORMAL	.	.	.
0	LOGNORMAL	.	.	.
0	EXPONENTIAL	.	.	.
0
0
0
0
0
0
0

OCCURRENCE FACTOR: OCCURRENCES:
 DISTRIBUTION OF CHOICE:

SAS

6:58 FRIDAY, FEBRUARY 24, 1989 20

PART OPERATION SUMMARY

PN: 3F40455-105
ALC: WARNER ROBBINS
RCC: MANPSA
SHEETMETAL, ADHESIVE BONDING
PCN: 51454A
WCD: M80A1B
WCD DATE: 87364
OPERATION: ZPRT
SAMPLE SIZE: 4
BACKSHOP
OPERATION TYPE:
MISSING FLOWTIMES: 1
END ITEMS:
MATERIAL TYPE:
OUTLIERS DELETED: 0

----- MANPOWER REQUIRED -----
SKILL QTY FRACTION HOURS
----- TIME -----
EQUIPMENT REQUIRED
CATEGORY QTY FRACTION HOURS
BATCH
MIN MAX

HISTORICAL DATA

ACTUAL FREQ	RELATIVE FREQUENCY											D ALPHA
	0	10	20	30	40	50	60	70	80	90	100	
0	0	0	0	0	0	0	0	0	0	0	0	0.639
2	0	0	0	0	0	0	0	0	0	0	0	0.588
4	0	0	0	0	0	0	0	0	0	0	0	0.404
6	0	0	0	0	0	0	0	0	0	0	0	0.000
8	0	0	0	0	0	0	0	0	0	0	0	0.438
10	0	0	0	0	0	0	0	0	0	0	0	
12	0	0	0	0	0	0	0	0	0	0	0	
14	0	0	0	0	0	0	0	0	0	0	0	
16	0	0	0	0	0	0	0	0	0	0	0	
18	0	0	0	0	0	0	0	0	0	0	0	
>=20	0	0	0	0	0	0	0	0	0	0	0	

OCCURRENCE FACTOR: 5

DISTRIBUTION OF CHOICE: HISTORICAL DISCRETE

SAS

6:56 FRIDAY, FEBRUARY 24, 1989 10

PART OPERATION SUMMARY

ALC: WARNER ROBBINS RCC: MANPPB

PN: 3H90046-129

NSN:

PCN: 51454A

WCD: MBB30B WCD DATE: 88064

OPERATION: ZPRT
SAMPLE SIZE:

MISSING FLOWTIMES:

BACKSHOP OPERATION TYPE:
END ITEMS:

MATERIAL TYPE:
OUTLIERS DELETED:

----- MANPOWER REQUIRED -----
SKILL QTY FRACTION HOURS

----- EQUIPMENT REQUIRED -----
CATEGORY QTY FRACTION HOURS

BATCH
MIN MAX

HISTORICAL DATA

ACTUAL FREQ	0	10	20	30	40	50	60	70	80	90	100	DISTRIBUTION	PARAMETERS	D VALUE	D ALPHA
0	UNIFORM	.	.	.
0	TRIANGULAR	.	.	.
0	NORMAL	.	.	.
0	LOGNORMAL	.	.	.
0	EXPONENTIAL	.	.	.
0
0
0
0
0

OCCURRENCE FACTOR: . OCCURRENCES:
DISTRIBUTION OF CHOICE:

>= 0

SAS

6:56 FRIDAY, FEBRUARY 24, 1989 9

PART OPERATION SUMMARY

ALC: WARNER ROBBINS RCC: MANPSA SHEETMETAL, ADHESIVE BONDING
NSN: PCN: 51454A WCD: MBA30B WCD DATE: 88064
PN: 3F40455-105
OPERATION: ZPRT
SAMPLE SIZE: 1
PRIMARY OPERATION TYPE: PROC MATERIAL TYPE: AL
MISSING FLOWTIMES: 1
OUTLIERS DELETED: 1

----- MANPOWER REQUIRED -----
SKILL QTY FRACTION TIME BATCH
MIN MAX

HISTORICAL DATA

ACTUAL	RELATIVE FREQUENCY	DISTRIBUTION	PARAMETERS	D
FREQ	0 10 20 30 40 50 60 70 80 90 100			VALUE ALPHA
0		UNIFORM		
0		TRIANGULAR		
0		NORMAL		
0		LOGNORMAL		
0		EXPONENTIAL		

OCCURRENCE FACTOR: . OCCURRENCES: .
DISTRIBUTION OF CHOICE: .

DISASSEMBLY/ASSEMBLY PROFILE

[illegible]

[illegible]

OPTION 3 - DISPLAY BCM WITH MFG PART NRS BY PEN													PAGE	2
PCN	ET-IDENTITY	ENGR	QFR	CCC	RCC	DATE-EST	DATE-LA	INDEX						
51454A	1550009275007JH	MANEEF	00100	100	J	87150	88193	87						
	COMP-STOCK-NR	UPA	STD	MI	C	M	E	P	I	UNIT-PRICE	*143*	MFG-PART-NR	FCBN *	
1550000727111JH	2	100	EN	A	D	EA	N	3	U	29.32	8	3F42106-103	98597	
												3F42106-103	98599	
1550001825349JH	1	16	EN	A	D	EA	N	3	U	75.17	8	3F40353-143	98597	
1550001683325JH	1	70	EN	A	D	EA	N	3	U	2122.40	8	3F40351-1011K1	98599	
1550001890715JH	1	74	EN	A	D	EA	N	3	U	30.13	8	3F40353-143	98597	
												3F40353-143	98599	

156001233334JH	1	11	BM	A	D	EA	N	M	U	2192.53	B
1560012330441JH	1	13	BM	A	D	EA	N	3	U	2480.47	B
1560012331564JH	1	24	BM	A	D	EA	N	M	U	1774.52	B
1560012332441JH	1	50	BM	A	D	EA	N	M	U	1890.73	B
1560012337211JH	1	30	BM	A	D	EA	N	M	U	1491.36	B
1560012337457JH	1	31	BM	A	D	EA	N	M	U	2026.48	B
1560012329012JH	1	99	BM	A	D	EA	N	3	U	105.30	B
1560012329018JH	1	36	BM	A	D	EA	N	3	U	1077.31	B
1560012932718JH	0	0	BM	A	D	EA	N	3	U	36.92	B
1560012933476JH	1	20	BM	A	D	EA	N	3	U	2039.51	B
1560012936653JH	1	24	BM	A	D	EA	N	3	U	2010.19	B
1560012976567JH	3	40	BM	A	D	EA	N	M	U	27.15	B
1560008676317	2	35	BM	A	D	EA	T	2	U	209.42	B
1560008617576	1	27	BM	A	D	EA	N	F	U	13.87	B
1560008277890	1	0	BM	L	T	EA	N	F	U	1.17	B
1560008571515JH	1	70	BM	A	D	EA	N	3	U	13.10	B

OPTION 3 - DISPLAY BOM WITH NFB PART NRS BY PBN
PBN 01-IDENTITY ENGR OFFER OCC RCO DATE-ENT DATE-LS INDEX
154544 15600092780074 HARVEST 00100 100 J 87100 88193 37
1560010757794JH 1 13 BM A D EA N 3 U 2015.8 2015.8 98897
156001233334JH 1 11 BM A D EA N M U 2192.53 8 98897
1560012330441JH 1 13 BM A D EA N 3 U 2480.47 8 98897
1560012331564JH 1 24 BM A D EA N M U 1774.52 8 98897
1560012332441JH 1 50 BM A D EA N M U 1890.73 8 98897
1560012337211JH 1 30 BM A D EA N M U 1491.36 8 98897
1560012337457JH 1 31 BM A D EA N M U 2026.48 8 98897
1560012929012JH 1 99 BM A D EA N 3 U 105.30 8 98897
1560012929018JH 1 36 BM A D EA N 3 U 1077.31 8 98897
1560012932718JH 0 0 BM A D EA N 3 U 36.92 8 98897
1560012933476JH 1 20 BM A D EA N 3 U 2039.51 8 98897
1560012936653JH 1 24 BM A D EA N 3 U 2010.19 8 98897
1560012976567JH 3 40 BM A D EA N M U 27.15 8 98897
1560008676317 2 35 BM A D EA T 2 U 209.42 8 98897
1560008617576 1 27 BM A D EA N F U 13.87 8 98897
1560008277890 1 0 BM L T EA N F U 1.17 8 98897
1560008571515JH 1 70 BM A D EA N 3 U 13.10 8 98897

5310001872395	0	0	BM	L	I	HD	N	F	U	1.20	B	MS20002C7	96706
5310002090027	0	0	BM	L	I	HD	N	F	U	1.20	B	MS20002C10	96706
5310002757211	0	0	BM	L	I	HD	N	F	U	6.77	B	MS20002C3	88044
5310002832177	0	0	BM	L	I	HD	N	F	U	13.70	B	MS20002C7	96706
5310003957079	0	0	BM	L	I	HD	N	F	U	5.63	B	BC22P301	57310
5310005961766	0	0	BM	L	I	HD	N	F	U	2.95	B	MS20002C4	57310
5310007367062	1	0	BM	L	I	EA	N	F	U	1.10	B	MS20002C8	96706

5310001872395	0	0	BM	L	I	HD	N	F	U	1.20	B	MS20002C7	96706
5310002090027	0	0	BM	L	I	HD	N	F	U	1.20	B	MS20002C10	96706
5310002757211	0	0	BM	L	I	HD	N	F	U	6.77	B	MS20002C3	88044
5310002832177	0	0	BM	L	I	HD	N	F	U	13.70	B	MS20002C7	96706
5310003957079	0	0	BM	L	I	HD	N	F	U	5.63	B	BC22P301	57310
5310005961766	0	0	BM	L	I	HD	N	F	U	2.95	B	MS20002C4	57310
5310007367062	1	0	BM	L	I	EA	N	F	U	1.10	B	MS20002C8	96706

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OPTION 3 - DISPLAY BOM WITH MFG PART NRS BY PDN
PCN EI-IDENTITY ENGR CPER CCC RGC DATE-EST DATE-LA INDEX
51454A 1550009275007JH MANIEEF 00100 100 J 87150 SB193 97
COMP-STOCK-NR UFA STD MI C M UI E P I UNIT-PRICE *145* MFG-PART-NR PCEN *
15X1530 19728
2735A 96767
43604166 53275
51044 34423
7203537 23040
JHP42-113 02032
MS24665-283 96706
P3579 06548
X601 14351
5-4-2047-26-33 81337
MS20392-3C21 96706
MS20392-3C21 96999
MS20392-3C21PIN 98997
3F42124-101 96752
3F42124-101 PI 96999
3F42124-103 96897
MS1670-0SL4 80295
EFA164-4 15741
35682-3-4 15177

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[illegible]

22

[illegible]

55+0000195735JH	2	0	EM	A	D	EA	N	F	C	8.36	B
55+0001416982	1	0	EM	A	D	EA	N	F	C	1.07	B
55+00067390816	1	11	EM	A	D	EA	N	F	C	155.66	B
55+0010222277	1	29	EM	A	D	EA	N	F	C	140.66	B

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DATE: 07/13/2011
TIME: 10:45:47
PAGE: 1
FILE: 07/13/2011
FILE NUMBER: 07133

PDN	ET-IDENTITY	ENGR	OPER	OCC	RGC	DATE-EST	DATE-LA	INDEX
1560000111145JH	1	1	1	1	1	1	1	1
1560000111147JH	1	1	1	1	1	1	1	1
1560000125020JH	1	1	1	1	1	1	1	1
1560000143449JH	0	0	0	0	0	0	0	0
1560000143467JH	1	17	5M	A	D	EA	N	3
1560000152417JH	1	1	7	EM	A	D	EA	N
1560001825368JH	1	1	3	EM	A	D	EA	N
1560001825369JH	1	1	40	EM	A	D	EA	N
1560001863542JH	1	1	60	EM	A	D	EA	N
1560001971015JH	1	1	0	EM	A	D	EA	N
1560002243239JH	1	1	35	BM	A	D	EA	N
1560004603419JH	1	1	37	BM	A	D	EA	N
1560004603421JH	1	1	31	BM	A	D	EA	N
1560004626474JH	1	1	100	BM	A	D	EA	N
1560004637078JH	2	2	81	BM	A	D	EA	N
1560004639688JH	1	1	33	BM	A	D	EA	N

OPTION 3 - DISPLAY BOM WITH MFG PART NRS BY PDN

PDN	ET-IDENTITY	ENGR	OPER	OCC	RGC	DATE-EST	DATE-LA	INDEX
5:453A	1560009275008JH	MANEBF	00100	100	J	67150	88193	89
COMP-STOCK-NR	UFA	STD	MI	C	M	UI	E	P
156000463970JH	1	40	BM	A	D	EA	N	3
156000463973JH	1	37	BM	A	D	EA	N	3
156000463975JH	1	37	BM	A	D	EA	N	3
1560004907653JH	1	33	EM	A	D	EA	N	3
1560004907655JH	1	40	BM	A	D	EA	N	3
1560004907657JH	1	33	EM	A	D	EA	N	3

PAGE 2

551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS31104-4	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS31104-8	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	6799400-25	78042
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	3F42144-1015SLT	98779
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	3F41551-129	98782
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS20002C3	98706
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	AN970-5	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	AN960-716L	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	AN960D716L	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	C141-4-2F87139	98877
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	8165217	18876
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	ANS10-4	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	401 101	77234
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS20002C10	98906
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS20002C7	98506
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	BC22P301	57310
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS20002C4	57310
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS20002C4	98706
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS20002C8 WASHE	98779
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS20364-832C	98706
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS21042-08	98706
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS21042-3	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS21042-3	98706
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS21042-3 NUT	81349
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	AN364-428C	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS21042-4	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS21042-4	98706
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS21042-4 NUT	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	AN10-40	18876

OPTION 3 - DISPLAY BOM WITH MFG PART NOS BY PGM													PAGE 1
PGM	BI-IDENTITY	ENGR	QTES	QCD	QSC	DATE-EST	DATE-LA	INDEX					
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS31104-4	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS31104-8	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	6799400-25	78042
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	3F42144-1015SLT	98779
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	3F41551-129	98782
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS20002C3	98706
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	AN970-5	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	AN960-716L	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	AN960D716L	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	C141-4-2F87139	98877
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	8165217	18876
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	ANS10-4	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	401 101	77234
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS20002C10	98906
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS20002C7	98506
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	BC22P301	57310
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS20002C4	57310
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS20002C4	98706
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS20002C8 WASHE	98779
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS20364-832C	98706
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS21042-08	98706
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS21042-3	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS21042-3	98706
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS21042-3 NUT	81349
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	AN364-428C	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS21042-4	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS21042-4	98706
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	MS21042-4 NUT	88044
551000133457524	1	0	BM	L	I	HD	N	F	U	4.39	L	AN10-40	18876

the 1990s, the number of people in the United States who are 65 years of age or older is projected to increase from 20 million to 35 million, and the number of people 75 years of age or older is projected to increase from 10 million to 15 million (U.S. Census Bureau, 1996). The number of people 85 years of age or older is projected to increase from 2 million to 4 million (U.S. Census Bureau, 1996). The number of people 90 years of age or older is projected to increase from 500,000 to 1 million (U.S. Census Bureau, 1996). The number of people 95 years of age or older is projected to increase from 100,000 to 200,000 (U.S. Census Bureau, 1996). The number of people 100 years of age or older is projected to increase from 10,000 to 20,000 (U.S. Census Bureau, 1996).

